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Title: America, Volume II (of 6)

Author: Joel Cook

Release Date: December 31, 2012 [EBook #41742]

Language: English

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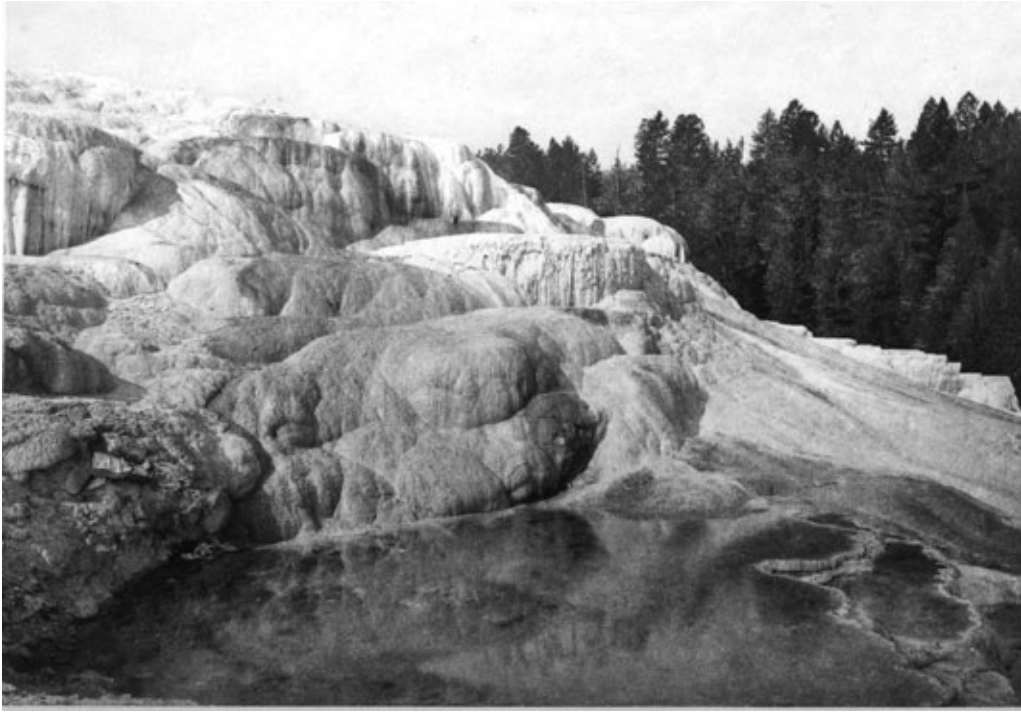
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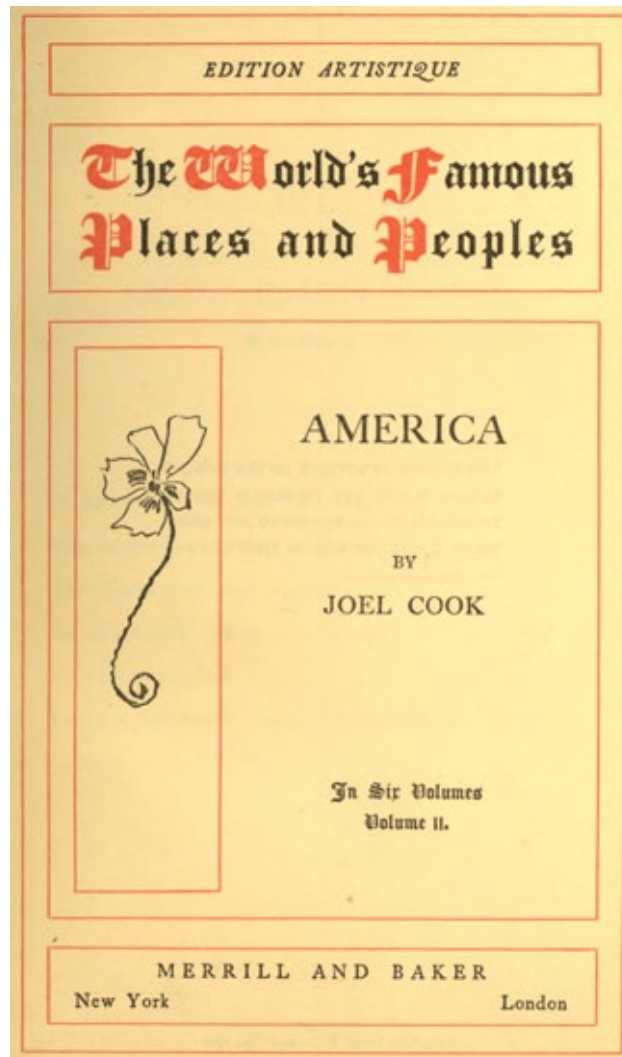
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On page [282](#) guerillas should possibly be guerrillas.

On page [293](#) vigilants should possibly be vigilantes.



AMERICA



EDITION ARTISTIQUE

The World's Famous Places and Peoples

AMERICA

BY
JOEL COOK

In Six Volumes
Volume II.

MERRILL AND BAKER
New York London

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CROSSING THE ALLEGHENIES.

IV.

CROSSING THE ALLEGHENIES.

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THE OLD PIKE.

The American aspiration has always been to go westward. In the early history of the Republic the Government gave great attention to the means of reaching the Western frontier, then cut off by what was regarded as the almost insurmountable barrier of the Alleghenies. General Washington was the first to project a chain of

internal improvements across the mountains, by the route of the Potomac to Cumberland, then a Maryland frontier fort, and thence by roads to the headwaters of the Ohio. The initial enactment was procured by him from the Virginia Legislature in 1774, for improving the navigation of the Potomac; but the Revolutionary War interfered, and he renewed the movement afterwards in 1784, resulting in the charter of the Chesapeake and Ohio Canal, of which Washington was the first President. Little was done at that early period, however, in building the canal, but the Government constructed the famous "National Road," the first highway over the Allegheny Mountains, from Cumberland in Maryland, mainly through Southwestern Pennsylvania, to Wheeling on the Ohio. This noted highway was finished and used throughout in 1818, and, until the railways crossed the mountains, it was the great route of travel to the West. It was familiarly known as the "Old Pike," and Thomas B. Searight has entertainingly recorded its pleasant memories, for it has now become mainly a relic of the past:

We hear no more of the clanging hoof,
And the stage-coach, rattling by;
For the steam king rules the travelled world,
And the Old Pike's left to die."

He tells of the long lines of Conestoga wagons, each drawn by six heavy horses, their broad wheels, canvas-covered tops and huge cargoes of goods; of the swaying, rushing mail passenger coach, the fleet-footed pony express; the flocks of sheep and herds of cattle, the droves of horses and mules sent East from the "blue-grass" farms of Kentucky; and occasionally of a long line of men and women, tied two and two to a rope, driven by a slave-master from the South, to be sold in the newer region of the Southwest. He describes how the famous driver, Sam Sibley, brings up his grand coach at the hotel in Uniontown with the great Henry Clay as chief passenger, and then after dinner whirls away with a rush, but unfortunately, dashing over a pile of stone in the road, the coach upsets. Out crawls the driver with a broken nose, and a crowd hastens to rescue Mr. Clay from the upturned coach. He is unhurt, and brushing the dust from his clothes says: "This is mixing the Clay of Kentucky with the limestone of Pennsylvania." Many are the tales of the famous road. One veteran teamster relates his experience of a night at the tavern on the mountain side—thirty six-horse teams were in the wagon-yard, one hundred mules in an adjoining lot, a thousand hogs in another, as many fat cattle from the West in a field, and the tavern crowded with teamsters and drovers—the grunts of the hogs, the braying

of the mules, the bellowing of the cattle and the crunching and stamping of the horses, "made music beyond a dream." In 1846 the message arrived at Cumberland at two o'clock in the morning that war was declared against Mexico, and a noted driver took the news over the mountains, past a hundred taverns and a score of villages, one hundred and thirty-one miles to Wheeling, in twelve hours. Over this famous road the Indian chief Black Hawk was brought, but the harness broke, the team ran away and the coach was smashed. Black Hawk crept out of the wreck, stood up surprised, and, wiping a drop of blood from his brow, earnestly muttered, "Ugh! Ugh! Ugh!" Barnum brought Jenny Lind over this road from Wheeling, paying \$17.25 fare apiece to Baltimore. Lafayette came along it in 1825, the population all turning out to cheer him. Andrew Jackson came over it four years later to be inaugurated the first Western President, and subsequently also came Presidents Harrison, Polk and Taylor. What was thought of the "Old Pike" in its day of active service was well expressed at a reception to John Quincy Adams. Returning from the West, he arrived at Uniontown in May, 1837, and was warmly welcomed. Hon. Hugh Campbell, who made the reception address, said to the ex-President: "We stand here, sir, upon the Cumberland Road, which has broken down the great wall of the Appalachian Mountains. This road, we trust, constitutes an indissoluble chain of Union, connecting forever, as one, the East and the West."

In the early part of the nineteenth century, Lancaster in Pennsylvania was the largest inland city of the United States. It is sixty-nine miles from Philadelphia, and the "old Lancaster Road," the finest highway of that period, was constructed to connect them. This began the Pennsylvania route across the Alleghenies to the West, which afterwards became the most travelled. In 1834 the Pennsylvania Government opened its State work, the Columbia Railroad between the Delaware and the Susquehanna. In 1836 there were four daily lines of stages running in connection with this State railroad between Philadelphia and Pittsburg, making the journey in sixty hours. Gradually afterwards the Pennsylvania Railroad was extended across the mountains, and the Baltimore and Ohio Railroad was completed to Wheeling, and they then took away the business from the "Old Pike" and all the other wagon or canal routes to the Ohio River.

CHESTER AND LANCASTER VALLEYS.

Let us go westward across the Alleghenies by the Pennsylvania route. East of the mountains it traverses a rich agricultural region, limestone valleys, intersected by

running streams and enclosed between parallel ridges of hills, stretching, like the mountain ranges, across the country from northeast to southwest. It is a land of prolific farms and dairies, and for miles beyond Philadelphia the line is adjoined by attractive villages and many beautiful suburban villas. Three noted institutions of learning are passed—Haverford College, the great Quaker College, standing in an extensive wooded park; the Roman Catholic Augustinian College at Villa Nova, with its cross-surmounted dome and twin church spires; and the Bryn Mawr College for women, one of the most famous in the United States. This is a region first settled by Welsh Quakers, and the name Bryn Mawr is Welsh for the "great hill." It is a wealthy and extensive settlement, and its College has spacious buildings and over three hundred students. At the Commencements they all join in singing their impressive College hymn:

Thou Gracious Inspiration, our guiding star,
Mistress and Mother, all hail Bryn Mawr,
Goddess of wisdom, thy torch divine
Doth beacon thy votaries to thy shrine,
And we, thy daughters, would thy vestals be,
Thy torch to consecrate eternally."

A few miles beyond is Paoli, preserving in its name the memory of the Corsican patriot Paoli, and the birthplace of the Revolutionary General "Mad Anthony" Wayne. Here the British defeated the American patriots in September, 1777. It stands on the verge of one of the garden spots of Pennsylvania, the Chester Valley, a charming region of broad and smiling acres, bounded on the northwest by the Welsh Mountain and Mine Hill, and a veritable land of plenty. The Brandywine and Valley Creeks water it, flowing out respectively to the Delaware and the Schuylkill. Beyond the long ridge of Mine Hill is Lancaster County, another land of rich farms, with many miles of grain and tobacco fields. Mine Hill is the watershed between the Delaware and the Susquehanna, the fertile Pequea Valley being at its western base. This is a great wheat country, and from here was sent the first American grain across the Atlantic to feed Europe, the Lancaster County wheat, in the days before the railroads brought it from the West, ruling prices for the American markets. It was hauled out in the ponderous Conestoga wagons, named after the Indian tribe which formerly ruled this region—their name signifying "the great magic land." They were a quarrelsome people, fighting all the neighboring tribes, and becoming deadly foes of the whites. Repeated wars decimated them, until in 1763 their last remnant, being hunted almost to death, took refuge in the ancient jail at Lancaster, and were

cruelly massacred by the guerillas called the "Paxton Boys."

In the midst of the wheat lands and bordering the broad Conestoga Creek, flowing down to the Susquehanna at Safe Harbor, is the city of Lancaster, its red sandstone castellated jail being a conspicuous object in the view. This city was originally called Hickory Town, but in the eighteenth century its loyal people christened it Lancaster, and named the chief streets, intersecting at the Central Market Square, King and Queen Streets, with Duke Street parallel to the latter. Prior to 1812 it was the capital of Pennsylvania. Lancaster is an attractive and comfortable old city of thirty-five thousand population, with many mills and factories and large tobacco houses. It has a splendid Soldiers' Monument in the Central Square, with finely sculptured guards, representing each branch of the service, watching at the base of the magnificent shaft. Upon the outskirts are the ornate buildings of Franklin and Marshall College, a foundation of the German Reformed Church, and it also has a Theological Seminary. The charm of Lancaster, however, is Woodward Hill Cemetery, on a bold bluff, washed by the Conestoga Creek, which forms a graceful circle around its base. Upon the surface and sides of the bluff the graves are terraced. Here is the tomb of James Buchanan, the only President sent from Pennsylvania, who died in 1868, at his home of Wheatland on the outskirts of the town. Another noted citizen of Lancaster was Thaddeus Stevens, who long represented it in Congress, and was the Republican leader in the House of Representatives during the Civil War, and afterwards until his death in 1868. He was the great champion of the emancipation of the negro race, and refused to be buried in the cemetery because negroes were excluded. Upon the grave which he selected in Lancaster are these words: "I repose in this quiet and secluded spot, not from any natural preference for solitude, but finding other cemeteries limited by charter rules as to race. I have chosen it that I might be enabled to illustrate in death the principle which I have advocated through a long life —equality of man before his Creator." When Lancaster was the chief town of the Colonial frontier in 1753, it was the place where Braddock's unfortunate expedition against Fort Duquesne at Pittsburg was organized and equipped, the work being mainly directed by Benjamin Franklin. Robert Fulton was born in Lancaster County, and he grew up and was educated at Lancaster, going afterwards to Philadelphia.



The Susquehanna West of Falmouth

THE SUSQUEHANNA RIVER.

The line westward from Lancaster crosses one long ridge-like hill after another stretching broadly over the country, and finally comes to the outlying ridge of the Allegheny range, the South Mountain, beyond which is the great Appalachian Valley. One railroad route boldly crosses this mountain through the depressions in the Conewago hills, where the picturesque Conewago Creek, the Indian "long reach," flows down its beautiful gorge to the Susquehanna, and this railroad finally comes out on that river at Middletown below Harrisburg; the other route follows a more easy gradient westward ten miles to Columbia, and this is used by the heavier freight trains. Coming towards it over the hills, the wide Susquehanna lies low in its broad valley, enclosed by the distant ridge of the Kittatinny bounding Cumberland County beyond the river. As it is approached, the thought is uppermost that this is one of the noblest, and yet among the meanest rivers in the country. Rising in Otsego Lake in New York, it flows over four hundred miles down to Chesapeake Bay, receives large tributaries, its West Branch being two hundred miles long, rends all the Allegheny Mountain chains, and takes a great part of the drainage of that region in New York and Pennsylvania, passes through grand valleys, noble gorges and

most magnificent scenery, and yet it is so thickly sown with islands, rocks and sand-bars, rapids and shallows, as to defy all attempts to make it satisfactorily navigable excepting by lumber rafts, logs and a few canal boats. Thus the Indians significantly gave its name meaning the island-strewn, broad and shallow river, and it is little more than a gigantic drain for Central Pennsylvania.

On its bank is Columbia, a town of busy iron and steel manufacture, as the whole range of towns are for miles up to and beyond Harrisburg. At Columbia first appeared, about 1804, that mysterious agency known as the "Underground Railroad," whereby fugitive slaves were secretly passed from one "station" to another from "Mason and Dixon's Line" to Canada, mainly through the aid and active exertions of philanthropic Quakers. All through Chester and Lancaster Counties and northward were laid the routes of this peculiar line, whose ramifications became more and more extensive as time passed, making the Fugitive Slave Law almost a nullity during the decade before the Civil War. There were hundreds of good people engaged in facilitating the unfortunate travellers who fled for freedom, and many have been the escapades with the slave-hunters, whose traffic long ago happily ended. At Middletown the Swatara River flows in from the hills of Lebanon County, there being all along the Susquehanna a prodigious development of the steel industry as well as rich farms on the fertile bottom lands. Here is the historic estate of Lochiel, which was the home of Simon Cameron, who for many years ruled the political destinies of Pennsylvania. He was born in 1799 at Maytown, near Marietta, on the Susquehanna, a few miles above Columbia, in humble circumstances, and came as a poor printer's boy to Harrisburg, rose to wealth and power, and when he was full of years and honors placed the mantle of the United States Senatorship upon his son. Their "Clan Cameron" which ruled Pennsylvania for two generations has been regarded as the best managed political "machine" in the Union, having in its ranks and among its allies not only politicians, but bankers, railway managers, merchants, manufacturers and capitalists, and men in every walk of life, ramifying throughout the Keystone State.

Harrisburg, the capital of Pennsylvania, stands upon the sloping eastern bank of the river in the grandest scenery. Just above, the Susquehanna breaks through the Kittatinny at the Dauphin Gap, giving a superb display of the rending asunder of the towering mountain chain. Opposite are the forest-clad hills of York and Cumberland bordering the fertile Cumberland Valley spreading off to the southwest, while behind the city this great Appalachian Valley continues between its enclosing ridges as the Lebanon Valley northeast to the Schuylkill

River at Reading. Market Street is the chief Harrisburg highway, and the Pennsylvania Railroad is the back border of the town. The State Capitol, set on a hill, was burnt, and is being rebuilt. A pleasant park encloses the site, and from the front a wide street leads down to the river, making a pretty view, with a Soldiers' Monument in the centre, which is an enlarged reproduction of Cleopatra's Needle. The Front Street of the city, along the river bank, is the popular promenade, and is adorned with the Executive Mansion and other fine residences, which have a grand outlook across the broad expanse of river and islands. Bridges cross over, among them the old "camel's back," a mile long, and having its shelving stone ice-breakers jutting up stream. This is the old wooden covered bridge that Charles Dickens wrote about in his *American Notes*. On his first American visit he came into Harrisburg from York County on a stage-coach through this bridge, and he wrote: "We crossed the river by a wooden bridge, roofed and covered on all sides, and nearly a mile in length. It was profoundly dark, perplexed with great beams, crossing and re-crossing it at every possible angle, and through the broad chinks and crevices in the floor the river gleamed far down below, like a legion of eyes. We had no lamps, and as the horses stumbled and floundered through this place towards the distant speck of dying light, it seemed interminable. I really could not persuade myself at first as we rumbled heavily on, filling the bridge with hollow noises—and I held down my head to save it from the rafters—but that I was in a painful dream, and that this could not be reality." The old bridge is much the same to-day as when Dickens crossed it.

Harrisburg was named for John Harris, who established a ferry here, and alongside the river bank is the little "Harris Park" which contains his grave. The stump of the tree at the foot of which he was buried is carefully preserved. A drunken band of Conestoga Indians came this way in 1718, and, capturing the faithful ferryman, tied him to the tree to be tortured and burnt, when the timely interposition of some Indians from the opposite shore, who knew him and were friendly, saved him. His son succeeded him and ran the ferry, and an enclosure in the park preserves this spot of historic memory.

LINCOLN'S MIDNIGHT RIDE.

It was from Harrisburg that Lincoln took the famous secret midnight ride, "in long cloak and Scotch cap," which enabled him to escape attack and possible assassination when going to be inaugurated President in 1861. Lincoln arrived in Philadelphia on his way to Washington February 21st, and had arranged to visit

Harrisburg next day, address the Pennsylvania Legislature, and then proceed to Washington by way of Baltimore. In Philadelphia General Scott and Senator Seward informed him that he could not pass through Baltimore at the time announced without great peril, and detectives who had carefully examined the situation declared his life in danger. Lincoln, however, could not believe that anyone would try to assassinate him and made light of the matter. On the morning of February 22d he raised a flag on Independence Hall in Philadelphia, and then went by railway to Harrisburg. There his friends again urged him to abandon his plan and avoid Baltimore. He visited the Legislature, and afterwards, at his hotel, met the Governor, several prominent people being present, among them Colonel Thomas A. Scott, then Vice-President of the Pennsylvania Railroad. Again the subject was discussed, and he was urged to avoid the danger threatening next day, being reminded that the railway passenger coaches were drawn through the Baltimore streets by horses, thus increasing the chances of doing him harm. He heard them patiently and answered, "What would the nation think of its President stealing into the Capital like a thief in the night?" But they only the more strenuously insisted, and finally he yielded, consenting to do whatever they thought best. Colonel Scott undertook the task, and during the early evening quietly arranged a special train to take Lincoln to Philadelphia, where he would get aboard the regular night express and be in Washington by daylight. Colonel Ward H. Lamon, a personal friend, was selected to attend Lincoln. As the party left the hotel a large crowd cheered them, and the Governor, Andrew G. Curtin, the better to conceal the intention, called out in a loud voice, "Drive us to the Executive Mansion." This was done, and when they had got away from the crowd the carriage was taken by a roundabout route to the station. Lincoln and Lamon were not noticed by the few people there, and quietly entering the car, left for Philadelphia. As soon as they had started Scott cut every telegraph wire leading out of Harrisburg, so nothing could be transmitted excepting under his control. Lincoln got to Philadelphia without trouble, was put aboard the express at midnight, and then at dawn Scott reunited his wires and called up Washington, a group of anxious men around him. Soon the message came back, slowly ticked out from the instrument, "Plums delivered nuts safely." Scott knew what it meant; he jumped to his feet, threw up his hat and shouted, "Lincoln's in Washington." The Baltimore plotters were thus foiled, as the new President passed quietly through that city before daylight, and several hours earlier than they had expected him.

THE CUMBERLAND AND LEBANON VALLEYS.

Harrisburg stands in the centre of the great Appalachian Valley, where it is bisected by the broad Susquehanna. To the southwest it stretches away to the Potomac as the Cumberland Valley, and to the northeast it spreads across to the Schuylkill as the fertile Lebanon Valley. The high mountain wall of the Kittatinny bounds it on the northwest, with all the rivers, as heretofore described, breaking out through various "gaps." In the Colonial days, when Indian forays were frequent, the Province of Pennsylvania defended the entrances to this fertile valley by a chain of frontier forts located at these gaps, with attendant block-houses, each post garrisoned by from twenty to eighty Provincial soldiers, as its importance demanded. Benjamin Franklin, who was then commissioned as a Colonel, was prominent in the advocacy of these frontier defences, and he personally organized the settlers and arranged the garrisons. Fort Hyndshaw began the chain on the Delaware, there were other forts on the Lehigh and Schuylkill, and Fort Henry located on the Swatara, now Lebanon, while just above Harrisburg was Fort Hunter, commanding the passage of the Susquehanna through the Dauphin Gap.

Over in the Cumberland Valley, about nineteen miles from Harrisburg, is Carlisle, a town of some nine thousand people, in a rich country, and the chief settlement of that valley. Here is located in what were formerly the army barracks, coming down from the time when this was a frontier post, the Government Indian Training School, where about eight hundred Indian boys and girls are instructed, being brought from the far western tribes to be taught the arts and methods of civilization. These Indian children are numerous in the streets and on the railway trains, with their straight hair, round swarthy faces and high cheek bones, and show the surprising influence of a civilizing education in humanizing their features and modifying their nomadic traits. They have quite a noted military organization and band at the School. Dickinson College, a foundation of the Methodist Church, is at Carlisle, having begun its work in 1783, when it was named after John Dickinson, then the President of Pennsylvania, who took great interest in it and made valuable gifts. Among its graduates were President James Buchanan and Chief Justice Roger B. Taney. Carlisle was President Washington's headquarters in 1794, during the "Whisky Insurrection" in Western Pennsylvania. After the United States Government got fairly started, the Congress in 1791 imposed a tax of seven cents per gallon on whisky. This made a great disturbance among the frontier settlers of Pennsylvania, who were largely Scotch-Irish, the population west of the Kittatinny to the Ohio River being then estimated at seventy thousand. They had no market for their grain, but they made it into whisky, which found ready sale.

A horse could carry two kegs of eight gallons each on the bridle paths across the mountains, and it was worth a dollar a gallon in the east. Returning, the horseback load was usually iron worth sixteen cents a pound, or salt at five dollars a bushel. Every farmer had a still, and the whisky thus became practically the money of the people on account of its purchasing value. Opposition to the tax began in riots. A crowd of "Whisky boys" from Bedford came into Carlisle and burnt the Chief Justice in effigy, setting up a liberty pole with the words "Liberty and No Excise on Whisky." President Washington called for troops to enforce the law, and this angered them. One John Holcroft, a ready writer, appeared, and wrote sharp articles against the law and the army, over the signature of "Tom the Tinker." These were printed in handbills, and the historian says "half the trees in Western Pennsylvania were whitened with Tom the Tinker's notices." Officials sent to collect the tax were roughly treated, farmers who paid it were beaten by masked men, and one man who rented his house to a tax collector was captured at midnight by a crowd of disguised vigilants, who carried him into the woods, sheared his hair, tarred, feathered and tied him to a tree.

Soon there were gathered at Carlisle an army of thirteen thousand men from Pennsylvania, New Jersey, Maryland and Virginia, under Governor Henry Lee of Virginia. President Washington and Secretary of the Treasury Alexander Hamilton came to Carlisle, and accompanied the troops, in October, 1794, on their march across the mountains to Bedford. The Governors of New Jersey and Pennsylvania led the troops of their respective States, and in the army were many Revolutionary veterans. As they advanced they found Tom the Tinker's notices on the trees, of which the following is a specimen:

"Brethren, you must not think to frighten us with fine arranged bits of infantry, cavalry and artillery, composed of your watermelon armies taken from the Jersey shores. They would cut a much better figure in warring with crabs and oysters about the banks of the Delaware. It is a common thing for Indians to fight your best armies in the proportion of one to five; therefore we would not hesitate to attack this army at the rate of one to ten."

The soldiers riddled these notices with bullets and pressed on, hunting for "Tom Tinker's men," as the insurgents came to be called. But they never seemed able to find them. All the people seen told how they were forced by threats, and when asked where the persons were who threatened them, replied, "Oh, they have run off." The army finally reached Pittsburg, the people submitted to the law and paid the tax, the insurrection was suppressed, and the army returned and was

disbanded. The whisky excise was peacefully collected afterwards until the tax was repealed.

In the Lebanon Valley east of Harrisburg are important iron furnaces, and here are the "Cornwall Ore Banks," which is one of the greatest iron-ore deposits in the world—less rich than some others, possibly, but having a practically exhaustless supply almost alongside these furnaces. There are three hills of solid iron ore, one of them having been worked long before the Revolution, the original furnace, still existing, dating from 1742. This great Cornwall iron mine was bought in 1737 for \$675, including a large tract of land. A half-century later \$42,500 was paid for a one-sixth interest, and to-day a one-forty-eighth interest is estimated worth upwards of \$500,000. These ores have some sulphur in them, and are therefore baked in ovens to remove it. They yield about 50 per cent. of iron. A geologist some time ago reported upon the ore banks that there were thirty millions of tons of ore in sight above the water-level, being over three times the amount taken out since the workings began in the eighteenth century. The deposits extend to a depth of several hundred feet under the surface, thus indefinitely multiplying the prospective yield.

THE SUSQUEHANNA HEADWATERS.

Otsego Lake, the source of the Susquehanna River, is one of the prettiest lakes in New York State, and is at an elevation of eleven hundred feet above tide. It is nine miles long and about a mile wide, the Susquehanna issuing from its southern end at Cooperstown, a hamlet of two thousand people, beautifully situated amid the high rolling hills surrounding the lake. The name of the lake comes from the "Ote-sa-ga rock" at the outlet, a small, round-topped, beehive-shaped boulder a few rods from the shore, just where the lake condenses into the river. This was the Indian Council rock, to which they came to hold meetings and make treaties, and it was well-known among the Iroquois and the Lenni Lenapes. James Fenimore Cooper, the novelist, who has immortalized all this region, called the lake the "Glimmerglass." His father, Judge William Cooper, founded the village of Cooperstown in 1786, afterwards bringing his infant son from Burlington, New Jersey, where he was born in 1789. Here the great American novelist lived until his death in 1851, his grave, under a plain horizontal slab, being in the little churchyard of Christ Episcopal Church. There is a monument to him in Lakewood Cemetery, about a mile distant, surmounted by a statue of his legendary hunter "Leatherstocking," who has been described as "a man who had the simplicity of a woodsman, the heroism of a savage, the faith

of a Christian, and the feeling of a poet." The old Cooper mansion, his home, Otsego Hall, was burnt in 1854, and its site is marked by a rock in the middle of the road, surrounded by a railing. "Hannah's Hill," named after his daughter, and commanding a magnificent view, which he always described with rapture, is on the western shore of the lake, just out of town. The charm of Cooper's genius and the magic of his description have given Otsego Lake a world-wide fame. In one place he described it as "a broad sheet of water, so placid and limpid that it resembled a bed of the pure mountain atmosphere compressed into a setting of hills and woods. Nothing is wanted but ruined castles and recollections, to raise it to the level of the scenery of the Rhine." And thus has the poet sung of it:

O Haunted Lake, from out whose silver fountains
The mighty Susquehanna takes its rise;
O Haunted Lake, among the pine-clad mountains,
Forever smiling upward to the skies,—
A master's hand hath painted all thy beauties;
A master's mind hath peopled all thy shore
With wraiths of mighty hunters and fair maidens,
Haunting thy forest-glades forevermore."

All around Otsego Lake and its neighborhood are the scenes which Cooper has interwoven into his novel, *The Deer-Slayer*. About seven miles northwest are the well-known Richfield Springs (magnesia and sulphur), near Candarago Lake. This Indian name, meaning "on the lake," has recently been revived to supersede the old title of Schuyler's Lake for this beautiful sheet of water, enbosomed in green and sloping hills, which is the chief scenic charm of Richfield. To the eastward from Otsego Lake is the romantic Cherry Valley, another attractive summer resort, and the scene of a sad Indian massacre in 1778, the site of the old fort that was then captured being still exhibited, with the graves of the murdered villagers, to whom a monument has been erected. A few miles farther, in a narrow upland wooded valley surrounded by high hills, are the Sharon Springs (sulphur and chalybeate), which in earlier times were so popular with our German citizens, who were attracted by the resemblance to the Fatherland, that the place was called the "Baden-Baden of America." The name of Sharon came from Sharon in Connecticut, and the spring water is discharged with a crust of white and flocculent sulphur into a stream not inappropriately called the Brimstone Brook. In this valley, east of the springs, one of the last Revolutionary battles was fought, Colonel Willett's American force in 1781 routing a detachment of Tories and Indians with severe loss. There are grottoes in the

neighborhood abounding in stalactites and beautiful crystals of sulphate of lime. Not far away is the noted Howe's Cave, an immense cavern, said to extend for eleven miles underground, being an old water-channel in the lower Helderberg limestone, and which has many visitors, attracted by its fine display of stalactites and grand rock chambers, with the usual subterranean lake and stream. All this region was originally settled by Germans from the Palatinate.

The Susquehanna, steadily gaining in volume, flows in wayward course down rapids and around many bends to Binghamton, near the southern border of New York, where it receives the Chenango River, and its elevation has declined to eight hundred and sixty feet. This is a busy manufacturing city and railway junction, having forty thousand inhabitants. The first settlers came in 1787, and William Bingham of Philadelphia owning the land at the confluence of the rivers, the town was afterwards named for him. The Chenango Canal connects the Susquehanna waters from here with the Erie Canal, about ninety miles northward, at Utica, the Indian word Chenango meaning "the bull thistle." Entering Pennsylvania, the Susquehanna now flows many miles past mountain and village, around great bends and breaking through the Allegheny ridges, passes along the Wyoming Valley, already described, and finally going out through the Nanticoke Gap, reaches Northumberland, where it receives its chief tributary, the West Branch. This great stream comes for two hundred miles from the westward through the Allegheny ranges, passing Lewisburg, the seat of the Baptist University of Lewisburg, Milton, and the noted lumber town of Williamsport, famous for its great log boom. This arrangement for collecting logs cost a million dollars, and extends about four miles up the river above the town, with its massive piers and braces, and will hold three hundred millions of feet of lumber. The river front is lined with basins and sawmills. In earlier years this boom has been so filled with pine and hemlock logs in the spring that the river could almost anywhere be crossed on a solid floor of timber. Unfortunately, however, the vast forests on the slopes of the Alleghenies have been so generally cut off that the trade has seriously declined. At Northumberland lived Dr. Joseph Priestley, the discoverer of oxygen gas, who died there in 1804, and is buried in the cemetery.

The Susquehanna now becomes a broad river, and just below flows past Sunbury, the railway outlet of the extensive Shamokin coal district. This town was originally Fort Augusta, built in 1756 to guard the Susquehanna frontier just below the junction of its two branches. In the French and Indian War it had usually a garrison of a regiment, and it was then regarded as the best defensive

work in Pennsylvania. After that war it gradually fell into decay, although during the Revolution it was always a refuge for the Susquehanna frontier settlers fleeing from Indian brutality and massacre. Many prominent officers of the Revolutionary army received their military training at this fort. The settlement was originally called Shamokin, from the Indian name of the creek here falling into the Susquehanna—Schakamo-kink, meaning, like Shackamaxon, "the place of eels." For fifty miles below Sunbury the broad Susquehanna winds among the mountain ranges, traversing one after another, until its channel is narrowed to pass through the great Dauphin Gap in the Kittatinny, five miles above Harrisburg, where the river bed has descended to an elevation of three hundred and twenty feet above tide.

THE BEAUTIFUL BLUE JUNIATA.

A long, low bridge carries the Pennsylvania Railroad across the river in front of Dauphin Gap, and a short distance above, in a delta of fertile islands, the Susquehanna receives its romantic tributary, the Juniata, flowing for a hundred miles from the heart of the Alleghenies, and breaking out of them through a notch cut down in the long ridge of the Tuscarora Mountain. Here is the iron-making town of Duncannon, settled by the sturdy Scotch-Irish, who were numerous along the Juniata and in its neighboring valleys, and who suffered greatly from Indian forays in the early days of the frontier. Upon Duncan's Island, the chief one in the delta, at the mouth of the Juniata, was the place of the council-fire of the Indian tribes of all this region. Now, this island is mainly a pleasure-ground, having spacious and shady groves, while the canal, crossing it from the Susquehanna to the Juniata, goes directly through an extensive Indian mound and burial-place. We will enter the fastnesses of the Alleghenies by the winding gorge of the "beautiful blue Juniata," flowing through magnificent scenery from the eastern face of the main Allegheny range out to the great river. It breaks down ridge after ridge, stretching broadly across the country, and presents superb landscapes and impressive mountain views. The route is a series of bends and gorges, the river crossing successive valleys between the ridges, now running for miles northeast along the base of a towering mountain and then turning east or southeast to break through it by a romantic pass. The glens and mountains, with ever-changing views, give an almost endless panorama. Softness of outline, massiveness and variety, are the peculiarities of Juniata scenery. The stream is small, not carrying a great amount of water in ordinary seasons, and it seems as much by strategy as by power to have overcome the

obstacles and made its mountain passes. The rended mountains, steep tree-covered slopes and frequent isolated sentinel-like hills rising from the glens, have all been moulded into rounded forms by the action of the elements, leaving few abrupt precipices or naked rocks to mar the regularity of the natural beauties. The valleys and lower parts of the mountain sides are generally cultivated, the fields sloping up to the mantle of forest crowning the flanks and summits of the ridges. Every change of sunshine or shadow, and the steady progress of the seasons, give new tints to these glens and mountains. At times the ravines are deep and the river tortuous, and again it meanders across the rich flat bottom lands of a broad valley. In its winding course among these mountain ranges, this renowned river passes through and displays almost the whole geological formation of Pennsylvania. The primary rocks are to the eastward of the Susquehanna, and the bituminous coal measures begin on the western Allegheny slope, so that the river cuts into a rock stratification over six miles in thickness, as one after another formation comes to the surface.

We go through the narrow Tuscarora Gap, and are journeying over the lands of the Tuscaroras, one of the Iroquois Six Nations, who came up from the South, and were given the name of Tuscarora, or the "shirt-wearer," because long contact with the whites had led them to adopt that garment. Beyond the Gap, the Tuscarora Valley is enclosed on its northwest side by the Turkey Mountain, the next western ridge, and it was a region of terrible Indian conflicts and massacres in the pioneer days, when the first fort built there was burnt, and every settler either killed or carried off into captivity. Here was fought the "Grasshopper War" between the Tuscaroras and Delawares. They had villages on opposite sides of the river, and one day the children disputed about some grasshoppers. The quarrel involved first the squaws and then the men, a bloody battle following. Mifflin, an attractive town, is located here, and to the westward the Juniata breaks through the next great ridge crossing its path, passing a massive gorge formed by the Shade and Blue Mountains, flowing for miles in the deep and narrow winding canyon between them, the far-famed "Lewistown or Long Narrows," having the railway hanging upon one bank and the canal upon the other. Broken, slaty shingle covers most of the hill-slopes, and in the broad valley, above the lengthened gorge, is Lewistown, nestling at the base of a huge mountain at the outlet of the beautiful Kishicoquillas Valley, spreading up among the high hills to the northward—its name meaning "the snakes are already in their dens." The hero of this attractive region in the eighteenth century, and then its most distinguished inhabitant, was Logan, the chief of the Mingoes and Cayugas, whose speeches, preserved by Thomas Jefferson, are a favorite in

school declamation. He was of giant mould, nearly seven feet high, and lived at Logan's Spring in the valley. He was the friend of the white men, but when the frontier became too well settled for him longer to find the deer on which he subsisted, selling their skins to the traders, he went westward to the Ohio River, locating near Wheeling. Here, without provocation, his family were cruelly massacred, and this ended Logan's love for the whites. He became a relentless foe, wreaking indiscriminate vengeance, until killed in the Shawnee wars beyond the Ohio, having joined that hostile tribe. The Lewistown Narrows are the finest mountain pass of the Juniata, the peaks precipitously rising over a thousand feet above the river, which forces a passage between them for more than eight miles, the densely wooded cliffs so enclosing and overshadowing the gorge as to give it an appearance of deepest gloom.

THE STANDING STONE AND SINKING SPRING.

Westward beyond the valley rises the next ridge pierced by the Juniata in its outflow, Jack's Mountain, and its gorge is known as "Jack's Narrows." Here penetrated Captain Jack Armstrong in the early colonial days, a hunter and Indian trader, whose cabin was burnt and wife and children massacred, making him always afterwards an avenging Nemesis, roving along the Juniata Valley and killing Indians indiscriminately. Jack's Narrows is a pass even more contracted than that below Lewistown, and a profusion of shingle and broken stone covers its mountain sides, the deranged limestone strata in places standing almost upright. Mount Union is in the valley east of this pass, and beyond it is the chief town of the Juniata, Huntingdon, which has about eight thousand people. This was the oldest settlement on the river, ninety-seven miles west of Harrisburg, the ancient "Standing Stone," where the Indians of the valley for centuries met to hold their councils. The earliest white settlers came in 1754. The original Standing Stone of Huntingdon, erected by the Indians, was a granite column, about fourteen feet high and six inches square, covered with strange characters, which were the sacred records of the Oneidas. Once the Tuscaroras stole it, but the Oneidas followed, and, fighting for their sacred treasure, recaptured it. When the whites came along, the Oneidas, who had joined the French, went west, carrying the stone with them. Afterwards, a second stone, much like the first, was set up, and a fragment of it is now preserved at Huntingdon. Here was built a large fort anterior to the Revolution, which was a refuge for the frontier settlers. The "Standing Stone" is engraved as an appropriate symbol on the city seal of Huntingdon, being surrounded by a representation of mountains, and the

name of "Oneida" (the granite) is preserved in a township across the river. Selina, the Countess of Huntingdon, who was a benefactor of the University of Pennsylvania, had her titled name given the city. The then University Provost, Dr. William Smith, became owner of the town site, and thus remembered her generosity. About fifty miles southwest of Huntingdon, amid the mountains, is Bedford, noted for its chalybeate and sulphur springs, discovered in 1804, which have long been a favorite resort of Pennsylvanians on account of their healing waters. The whole country thereabout is filled with semi-bituminous coal measures, furnishing a lucrative traffic.

Diminishing in volume, our attractive Juniata flows through a rough country above Huntingdon, after threading the pass in the lofty Warrior Ridge. Extending off to the southwestward is Morrison's Cove, a rich valley under the shadow of the long mountain ridge, which was settled in 1755 by the Dunkards. These singular people, among whose cardinal doctrines are peace and non-resistance, were attacked by the Indians in 1777, who entered the valley and almost exterminated the settlement. Most of them bowed submissively to the stroke of death, gently saying "Gottes wille sei gethan" (God's will be done). One, however, resisted, killed two Indians and escaped; but afterwards returning, the Dunkard Church tried him for this breach of faith, and he was excommunicated. In this region is the Sinking Spring, a strange water course originally appearing in a limestone cave, where it comes out of an arched opening, with sufficient water to turn a large mill; but it soon disappears underground, the concealed current being heard through fissures, bubbling far below. Then it returns to the surface, flowing some distance, enters another cave, passing under Cave Mountain, and finally reappears and falls into the Juniata, making, in its peculiar waywardness, as remarkable a stream as can anywhere be found. Here our famous Juniata River, dwindled to a little creek, comes down the mountain side, and we penetrate farther by following up the Little Juniata. It has brought us, through the great ridges, into the heart of the Appalachian region, to the eastern base of the main Allegheny Mountain, on the flanks of which are its sources. It has displayed to us a noted valley, full of the story of early Colonial contests, massacres and perils, the scenes of the fearless missionary labors of Brainerd the Puritan and Loskiel the Moravian. Brainerd recognized the pagan idolatry of the Indians, and did not hesitate to take the Bible to their solemn religious festivals and expound its divine principles, to spoil the incantations and frustrate the charms of their medicine men. Once a Nanticoke pontiff got into a hot argument with Brainerd, saying God had taught him religion and he would never turn from it; that he would not believe in the Devil; and he added that the souls of the dead

passed to the South, where the good lived in a fair city, while the evil hovered forever in outer darkness. Many are the romances of the attractive Juniata:

Gay was the mountain song
Of bright Alfarata,
Where sweep the waters of
The blue Juniata:
'Strong and true my arrows are,
In my painted quiver,
Swift goes my light canoe
Adown the rapid river.'"

CROSSING THE MOUNTAIN TOP.

At the eastern base of the main Allegheny range a long mountain valley stretches broadly from the far northeast to the southwest, and here is Tyrone, a settlement of extensive iron works, and the outlet of the greatest bituminous coal-fields of Central Pennsylvania, the Clearfield district, the town of Clearfield being about forty miles to the northwest. Northeast of Tyrone, this valley is called the Bald Eagle Valley, a picturesque and fertile region; and to the southwest it is the Tuckahoe Valley. At the base of the Bald Eagle Mountain, thirty-three miles from Tyrone, is the town of Bellefonte, another iron region, handling the products of the Bald Eagle and Nittany Valleys, and receiving its name from the "Beautiful Fount" which supplies the town with water. This is one of the most remarkable springs in the Alleghenies, pouring out two hundred and eighty thousand gallons of the purest water every minute. Following the Tuckahoe Valley southward, at the base of the main Allegheny range we come to the Pennsylvania Railroad town of Altoona, and eight miles farther to Hollidaysburg. Each is a representative town—Hollidaysburg of the past methods of crossing the mountain top, and Altoona of the present.

In 1836 Mr. David Stephenson, the famous British railway engineer, made a journey across Pennsylvania by the methods then in vogue, and wrote that he travelled from Philadelphia to Pittsburg, three hundred and ninety-five miles by the route taken, in ninety-one hours, at a cost of three pounds sterling, about four cents a mile, and that one hundred and eighteen miles of the journey, which he calls "extraordinary," were by railroads, and two hundred and seventy-seven miles by canals. This was the line used for twenty years, a main route of travel from the seaboard to the West, having been put into operation in 1834. It followed the Columbia Railroad from Philadelphia to Columbia on the Susquehanna, the canal up the Susquehanna and Juniata Rivers to Hollidaysburg, a portage railroad by inclined planes over the main Allegheny Mountain ridge to

Johnstown, and the canal again, down the Conemaugh and Allegheny Rivers to Pittsburgh. There were one hundred and seventy-two miles of canal from Columbia to Hollidaysburg, which went through more than a hundred locks and crossed thirty-three aqueducts, having risen about six hundred feet above the level at Columbia when it reached the eastern face of the mountain. The canal west of Johnstown was one hundred and five miles long, descended sixty-four locks, and went through a tunnel of one thousand feet. The Portage Railroad of thirty-six miles crossed the mountain by Blair's Gap, above Hollidaysburg, at twenty-three hundred and twenty-six feet elevation, through a tunnel nine hundred feet long. There were ten inclined planes, five on each side. The steepest side of the Allegheny Mountain being its eastern face, the railway from Hollidaysburg to the summit, though only ten miles long, ascended fourteen hundred feet, while twenty miles of railway on the western side descended eleven hundred and seventy-two feet. The cars hauled up the planes each carried three tons of freight, and three cars were hauled at a single draft. There could be twenty-four cars carrying seventy-two tons passed over in one hour, which was ample for the traffic at that time, the average business being three hundred tons of freight a day. This amount would be carried in less than ten of the big cars of to-day. It took passengers eight hours to go over the mountain, halting one hour on the summit for dinner.

This route was superseded by the Pennsylvania Railroad crossing above Altoona, opened in 1854, a road made for ordinary trains; and then Hollidaysburg became a town of iron manufacture, losing the bustle and business of the Portage, which was abandoned. The railroad company acquired a large tract of land between the main Allegheny range and the Brush Mountain to the southward, which has a deep notch, called the "Kettle," cut down into it, opening a distant prospect of gray mountain ridges behind. Here has been established the most completely representative railway city in the world, having enormous railway shops, a gigantic establishment, and a population of thirty-five thousand, almost all in one way or another dependent on the Pennsylvania Railroad. Altoona is at an elevation of about eleven hundred feet above tide, and the railway climbs to the summit of the mountain by a grade of ninety feet to the mile, winding around an indented valley to get the necessary elevation. At its head this valley divides into two smaller glens, with a towering crag rising between them. Having ascended the northern side, the railway curves around, crossing the smaller glens upon high embankments, doubling upon itself, and mounting steadily higher by running up the opposite side of the valley to the outer edge of the ridge. This sweeping curve gives striking scenic effects, and is

the noted Pennsylvania "Horse Shoe," and the huge crag between the smaller glens, in which the head of the Horse Shoe curve is partly hewn, is Kittanning Point. This means the "great stream," two creeks issuing out of the glens uniting below it; and here was the route, at sixteen hundred feet elevation, of the ancient Indian trail across the mountain, the "Kittanning Path," in their portage between the Juniata and Ohio waters. It shows how closely the modern railroad builder has followed the route set for him by the original road-makers among the red men. The Pennsylvania Railroad carries four tracks over the mountain, piercing the summit by two tunnels at about twenty-two hundred feet elevation, with two tracks in each. The mountain rises much higher, and has coal mines, coke ovens and miners' cabins on the very top. This is the watershed dividing the Atlantic waters from those of the Mississippi, flowing to the Gulf, and Gallitzin, a flourishing mining village, is the summit station of the railway.



The Conemaugh near Florence

GOING DOWN THE CONEMAUGH.

In the latter part of the eighteenth century there were but two white men living in all this region. The first one there was Thomas Blair, whose cabin was on the mountain at Blair's Gap, where the Portage Railroad afterwards came over. The other was Michael Maguire, who came along in 1790, and going through the

Gap, concluded to settle among the Indians about twelve miles away, at what was afterwards Loretto. These rugged pioneers spent most of their time fighting and watching the Indians and wild beasts, and gathered a few companions around them. Here afterwards came Prince Demetrius Augustine Gallitzin, who left the Russian army in 1792 and visited America, designing to travel. He became a Catholic priest, and liking these mountains, established a mission at Loretto in 1798, spending a fortune in maintaining it, his missionary charge ultimately extending over the whole mountain region. He attracted a population of about three thousand, chiefly Germans and Irish, repeatedly refused the episcopacy, and continued his labors until his death at Loretto in 1840. His remains lie in front of his church, surmounted by a monument, while the centenary of this St. Michael's Church of Loretto was marked in October, 1899, by erecting his bronze statue, the Prelate-Prince Gallitzin being portrayed as he appeared in the Allegheny wilderness, wearing cassock, surplice and a skull-cap in lieu of the beretta, this being his usual head-gear at service. Loretto, named after the city on the Adriatic, was the first nucleus of population in this elevated district, and is about five miles north of the railway. Loretto was the first settlement in this region, but afterwards the coal and iron attracted the Welsh, who came in numbers, and founded the town of Ebensburg, about eleven miles from the railway. They gave their familiar name of Cambria to the county. Here on the mountain side, at an elevation of over two thousand feet, are the Cresson Springs, a noted health resort, with a half-dozen medicinal springs, the chief being an astringent chalybeate and a strong alum.

The route west of the mountain is down the valley of the Conemaugh, in a district underlaid with coal, and having at every village evidence of this industry. The Conemaugh is "the other stream" of the Indians, and winding down its tortuous valley, with coal and iron all about, the railway comes to the settlement of Conemaugh, which spreads into the larger town of Johnstown, the seat of the great Cambria Steel Works. The Conemaugh Valley is a deep canyon, and Conemaugh village was the western terminus of the mountain portage, where the canal began. A little flat space about a mile beyond, at the junction of Stony Creek, was in early times an Indian village, then known from its sachem as "Kickenapawling's Old Town." When the white men ventured over the mountain, there came among them a hardy German pioneer named Joseph Jahns, who built a log cabin on the flat in 1791, and from him the cluster of little houses that grew afterwards became known as Jahnstown. Then came the Welsh miners and iron-workers, and they set up charcoal furnaces, and soon changed the name to Johnstown. From this humble beginning grew the largest iron and steel

establishment in Pennsylvania. Its ores, coal and limestone were originally all dug out of the neighboring ridges, though now it uses Lake Superior ores. The Conemaugh Valley is here enclosed by high hills, and in the centre of the town the railroad is carried across the river on a solid stone bridge with low arches.

This region, on May 31, 1889, was the scene of one of the most appalling disasters of modern times. A deluge of rain for the greater part of two days had fallen upon the Alleghenies, and made great freshets in both the Juniata and the Conemaugh. On the South Fork of the Conemaugh, fifteen miles above Johnstown, is Conemaugh Lake, a reservoir there formed by damming the stream, so that it covered a surface of five hundred acres—the dam, a thousand feet long, being in places one hundred feet high. This had been made as a fishing-ground by a club of Pittsburg anglers. The excessive rains filled the lake, and the weakened dam burst, its twenty millions of tons of waters rushing down the already swollen Conemaugh in a mass a half-mile wide stretching across the valley and forty to fifty feet high, carrying everything before it. The lake level was about three hundred feet higher than Johnstown, and every village, tree, house, and the whole railway, with much of the soil and rocks, were carried before the resistless flood to Johnstown, where the mass was stopped by and piled up behind the stone railway bridge, and there caught fire, the resistless flood, to get out, sweeping away nearly the whole town in the valley bottom. This vast calamity destroyed from three to five thousand lives, for no accurate estimate could be ever made, and ten millions of property. It took the flood about seven minutes of actual time to pass over the fifteen miles between the lake and Johnstown, and there was left, after it had passed, a wide bed, like a great Alpine glacial *moraine*, filled with ponderous masses of sand and stones and wreckage of every description, the resistless torrent being afterwards reduced to a little stream of running water. It required many months to recover from this appalling destruction; but the people went to work with a will and rebuilt the town, the steel works and the railway, which for a dozen miles down the valley had been completely obliterated. This terrible disaster excited universal sympathy, and a relief fund amounting to nearly \$3,000,000 was contributed from all parts of the world.

LIGONIER AND HANNASTOWN.

The whole mountain district west of Johnstown is filled with coal mines, coke ovens and iron furnaces, this being the "Pittsburg Coal District." The Conemaugh breaks through the next western ridge, the Laurel Mountain, and the

broadening river winds along its deep valley between high wooded hills. It is a veritable "Black Country," and ten miles beyond, the river passes the finest mountain gorge on the western slope of the Alleghenies, the deep and winding canyon of the Packsaddle Narrows, by which the Conemaugh breaks out of the Chestnut Ridge, the western border of the Allegheny ranges. For two hundred miles the railroad has gone through or over range after range, and this grand pass, encompassed by mountains rising twelve hundred feet above the bottom of the gorge, is the impressive exit at the final portal. The main railroad then leaves the Conemaugh, and goes off southwestward along the slope of Chestnut Ridge towards Greensburg and Pittsburg. The river unites with the Loyalhanna Creek below, and then flows as the Kiskiminetas down to the Allegheny. The name of Loyalhanna means the "middle stream," while the tradition is that an impatient Indian warrior, anxious to move forward, shouted in the night to his comrades encamped on the other river—"Giesh-gumanito"—"let us make daylight"—and from this was derived its name of Kiskiminetas. A branch railroad from here goes to Blairsville, named in memory of the solitary pioneer of Blair's Gap, and another northward leads to the town of Indiana. The great Chestnut Ridge which the main railway runs along, gradually descending the slope, is the last mountain the westbound traveller sees until he reaches the Rockies. For seventy miles to the southwestward the Chestnut Ridge and Laurel Mountain extend in parallels, their crest lines being almost exactly ten miles apart, and enclosing the Ligonier Valley, out of which flows northward the Loyalhanna Creek, breaking through the Chestnut Ridge. Near this pass in 1757 was built Fort Ligonier, another of the frontier outposts which resisted the incursions of the French and Indians, who then held all the country to the westward. In the Chestnut Ridge at Hillside is the "Great Bear Cave," an extensive labyrinth of passages and spacious chambers stretching more than a mile underground, which, like most such places, has its subterranean river and its tale of woe. A young girl, stolen by gypsies, to escape from them took refuge in this cave, and losing her way, perished, her bones being found years afterwards. Explorers since have always unwound balls of twine in this labyrinth, to be able to retrace their steps.

In a good farming district of the Westmoreland region is Greensburg, another railway junction where branches go southward to the Monongahela coalfields. Robert Hanna built a house near here in the eighteenth century, around which gathered some thirty log cabins, and the place in course of time became known as Hannastown, prominent in the early history of Western Pennsylvania. Here was held the first court convened west of the Alleghenies, and here were passed the patriotic resolutions of May 16, 1775, upon receipt of the news of the battle

of Lexington at the opening of the Revolution, which sounded the keynote for the Declaration of Independence the following year. Here also first appeared during the Revolution General Arthur St. Clair, an immigrant from Scotland, the grandson of the Earl of Roslyn, who lived in an humble house on Chestnut Ridge. He served in the French and Indian wars, and was the British commander at Fort Ligonier. Horrible Indian massacres and terrible retributions by the settlers were the chief features of the Revolutionary War in Westmoreland. At its close, the whites sent an expedition in 1782 against the Wyandottes, which was defeated. The savages soon wreaked fearful vengeance, raiding the region in July of that year and burning Hannastown, which was never rebuilt. Greensburg appeared soon afterwards, however, and in 1875 it celebrated the centenary of the Hannastown resolutions with patriotic spirit. In its Presbyterian churchyard lie the remains of General St. Clair, who, after founding and naming the city of Cincinnati, returned here, and died in 1818, at the age of eighty-four, in his lonely cabin on Chestnut Ridge, in unmerited poverty and obscurity. The stone over his grave has this significant inscription: "The earthly remains of General Arthur St. Clair are deposited beneath this humble monument, which is erected to supply the place of a nobler one due from his country." Being in a region of fine agriculture and prolific mines, Greensburg is a prosperous and wealthy town.

BRADDOCK'S DEFEAT.

Natural gas is added to coal and coke in the region beyond Greensburg, and the villages display flaring gas torches at night for street lamps. The whole country, north, south and west, is a network of railways and a maze of mines, having long rows of burning coke ovens lighting the sky with their lurid glare. Here are mined the Westmoreland gas coals. The valley of the Monongahela River, coming up from West Virginia, approaches from the southward, a great highway for coal boats out to the Ohio and the West, also receiving a large coal tribute from its branch, the Youghiogheny, flowing by crooked course through Fayette County. Alongside the Monongahela is the great Edgar Thomson Steel Works, one of the chief establishments of the Carnegie Steel Company, making railway rails. Here is the famous Colonial battlefield of Western Pennsylvania, made immortal by General Braddock's defeat in July, 1755. This region was then a thick forest, through which an Indian trail coming over the Monongahela led to the junction of the two rivers forming the Ohio, where the French had established their stockade and trading post of Fort Duquesne. Braddock came

into this region from beyond the mountains, his object being the capture of the fort. His defeat, a great event in our Colonial history, was due to his ignorance of the methods of Indian fighting and his refusal to listen to those who understood it; but he paid the penalty with his life, being shot, as was believed at the time, by one of his own men, after having had five horses shot under him. It was in rallying the defeated remnant that Washington, the senior surviving officer, won his first military laurels. Braddock crossed the river and was caught in an ambushade, eight hundred and fifty French and Indians surprising and defeating his force of about twenty-five hundred British regulars and Virginia Provincial troops, the loss being nearly eight hundred. Washington led the remnant back to Virginia, carrying Braddock about forty miles on the retreat, when he died. He was buried at night in the centre of the road, Washington reading the Episcopal burial service by torchlight, and the defeated army marched over the grave to conceal its location from the enemy. A handsome monument is erected on the battlefield at Braddock's. And thus, through iron mills and coal mines, amid smoke and busy industry, the Pennsylvania Railroad enters Pittsburg, the "Iron City."

THE GREAT IRON CITY.

The Monongahela River coming from the southward, and the Allegheny River flowing from the northward, drain the western defiles of the Alleghenies, and at Pittsburg unite to form the Ohio River. Each comes to the junction through a deeply-cut canyon, and at the confluence is a triangular flat upon which the original town was built. Like most American rivers, all these have names of Indian origin. Monongahela is the "river of high banks, breaking off in places and falling down." Ohio is a Seneca word, originally pronounced "O-hee-o," and meaning the "beautiful river" or the "fair water," and Allegheny in the language of the Delawares has much the same signification, meaning "the fairest stream." All the Indians regarded the two as really the same river, of which the Monongahela was a tributary. The first white men exploring this region were the French, who came down from the lakes and Canada, when they spread through the entire Mississippi Valley. In 1753, however, Washington with a surveying party was sent out by Virginia and carefully examined the site of Pittsburg, advising, on his return, that a fort should be built there to check the advance of the French, and the next year this was done. Scarcely was it completed, however, when the French sent a summons to surrender, addressed "From the Commander-in-chief of His Most Christian Majesty's troops now on the

Beautiful River to the Commander of those of Great Britain." A French force soon appeared, and the fort was abandoned. This began the French and Indian Colonial War that continued seven years, the French then erecting their famous fort and trading-post guarding the head of the Ohio, which they named after the great French naval commander of the seventeenth century, Marquis Abraham Duquesne. Then came Braddock's defeat in 1755, and for some time the region was quiet. Moravian missionary influence, however, had by 1758 detached many of the Indians from the French interest, and after another British attack and repulse, General Forbes came with a large force, and the French abandoned the fort and blew it up. Immediately rebuilt by the English, a Virginia garrison occupied the post, and it was named Fort Pitt. Then a larger fort was built at a cost of \$300,000 and garrisoned by artillery, which the enemy vainly besieged in 1763. The next year a town site was laid out near the fort, and in 1770 it had twenty log houses. After the long succession of wars and massacres on that frontier had ceased, the village grew, and business began developing—at first, boat- and vessel-building, and then smelting and coal mining and the manufacture of glass. In 1812 the first rolling-mill started, and the war with England in that year caused the opening of a cannon foundry, which became the Fort Pitt Iron Works. The village of Fort Pitt had become Pittsburg, and expanded vastly with the introduction of steam, and it became an extensive steamboat builder for the Western waters. Railroad connections gave it renewed impetus; natural gas used as a manufacturing fuel was a wonderful stimulant; and it now conducts an enormous trade with all parts of the country, and is the seat of the greatest iron, steel and glass industries in America.

Few views are more striking than that given from the high hills overlooking Pittsburg. Rising steeply, almost from the water's edge, on the southern bank of the Monongahela River, is Mount Washington, three hundred and fifty feet high. Inclined-plane railways are constructed up the face of this hill, and mounting to the top, there is a superb view over the town. The Allegheny River comes from the northeast and the Monongahela from the southeast, through deep and winding gorges cut into the rolling tableland, and uniting form the Ohio, flowing away to the northwest also through a deep gorge, although its bordering ridges of hills are more widely separated. Pittsburg stands upon the low flat surface of the peninsula, above the junction of the rivers, which has some elongated ridgy hills, stretching eastward through the centre. Its situation and appearance have thus not inaptly been compared to a flatiron, the point being at the head of the Ohio, and these ridgy hills making the handle. The city has overflowed into extensive suburbs across both rivers, the aggregate population being more than a half-

million. Numerous bridges span the rivers, the narrow shores between the steep hills bearing a mixed maze of railways and factories. Countless chimney-smokes and steam-jets come up in all directions, overhanging the town like a pall; and so impressive is the obscuration, combined with the lurid glare of furnaces and the weird white gleam of electric lights, that the elevated view down into Pittsburg seems a veritable pandemonium. So startling is it on a lowering day that it has been pointedly described by one who thus for the first time looked upon the "Smoky City," far down in its deep basin among the high hills, as appearing like "Hell with the lid off." There are plenty of railways in the scene, and scores of odd-looking, stumpy-prowed little steamboats built high above the water, having huge stern-wheels to drive them, with their noses thrust up on the sloping levee along the river bank, whereon is piled the cargoes, chiefly of iron products. The swift current turns all the sterns down stream, so that they lie diagonally towards the shore. Fleets of flat, shallow coal barges are moored along, waiting to be made up into tows for their journey down the Ohio, as Pittsburg has an extensive river trade, covering over twenty thousand miles of Western waters. Out of the weird and animated scene there come all sorts of busy noises, forges and trip-hammers pounding, steam hissing, railroad trains running, whistles screeching, locomotives puffing, bells ringing, so that with the flame jets rising, and the smokes of all colors blowing about, there is got a good idea of the active industries of this very busy place.

PITTSBURG DEVELOPMENT.

This wonderful industrial development all came within the nineteenth century. There is still preserved as a relic of its origin the little block-house citadel of the old Fort Pitt, down near the point of the peninsula where the rivers join. This has recently been restored by the Daughters of the American Revolution—a small square building with a pyramidal roof. The surrounding stockade long ago disappeared. There is in the Pittsburg City Hall an inscribed tablet from Fort Pitt bearing the date 1764. The old building, which was the scene of Pittsburg's earliest history, for it stands almost on the spot occupied by Fort Duquesne, is among modern mills and storehouses, about three hundred feet from the head of the Ohio. Pittsburg, after an almost exclusive devotion to manufacturing and business, began some years ago to cultivate artistic tastes in architecture, and has some very fine buildings. There is an elaborate Post-office and an interesting City Hall on Smithfield Street; but the finest building of all, and one of the best in the country, is the magnificent Romanesque Court-house, built at a cost of

\$2,500,000, and occupying a prominent position on a hill adjoining Fifth Avenue. There is a massive jail of similar architecture, and a "Bridge of Sighs" connects them, a beautifully designed arched and stone-covered bridge, thrown for a passageway across an intervening street. The main tower, giving a grand view, rises three hundred and twenty feet over the architectural pile, and, as in Venice, the convicted prisoner crosses the bridge from his trial to his doom. There are attractive churches, banks and business buildings, and eastward from the city, near Schenley Park, is the attractive Carnegie Library and Museum in Italian Renaissance, with a capacity for two hundred thousand volumes, a benefaction of Mr. Andrew Carnegie, originally costing \$1,100,000, to which he has recently added \$1,750,000 for its enlargement. The residential section is mainly on the hills east of Pittsburg and across the Allegheny River in Allegheny City, there being many attractive villas in beautiful situations on the surrounding highlands.

But the great Pittsburg attraction is the multitude of factories that are its pride and create its prosperity. Some of these are among the greatest in the world—the Edgar Thomson Works and Homestead Works of the Carnegie Steel Company, the Duquesne Steel Works, the Keystone Bridge Company, and others. The Edgar Thomas mills make over a million tons of rails a year, and at Homestead fifteen hundred thousand tons of steel will be annually produced, this being the place where nickel-steel armor-plates for the navy are manufactured. They largely use natural gas, and employ at times ten thousand men at the two great establishments. The Duquesne Works, just above Homestead on the Monongahela, have the four largest blast furnaces in the world, producing twenty-two hundred tons of pig-iron daily. The Keystone Bridge Works cover seven acres, and have made some of the greatest steel bridges in existence. The Westinghouse Electrical Works manufacture the greatest dynamos, including those of the Niagara Power Company, and the Westinghouse Air-Brake Works is also another extensive establishment. In the Pittsburg district, covering about two hundred square miles, the daily product of mines and factories is estimated at \$6,000,000.

The two men whose names are most closely connected with Pittsburg's vast industrial development are Andrew Carnegie and George Westinghouse. Carnegie was born at Dunfermline, Scotland, in 1837, and his father, a potter, brought him to Pittsburg when eleven years old. He began life as a telegraph messenger boy, attracted the attention of Colonel Thomas A. Scott, and was by him brought into the service of the Pennsylvania Railroad. Then he entered

business, and became the greatest developer of the iron and steel industries of Pittsburg and its wealthiest resident. He some time ago sold out his interests to the Carnegie Steel Company, in which he is largely interested. Westinghouse, born in New York State in 1846, combined with business tact the genius of the inventor. He invented and developed the railway air-brake now in universal use, has established a complete electrical lighting and power system, and was the chief adapter of natural gas to manufacturing and domestic uses, being the inventor of many ingenious contrivances for its introduction and economical employment. He had a gas well almost at his door, for Pittsburg overlaid a great deposit. The enormous coal measures underlying and surrounding the city have been its most stable basis for industry and profit, as the Pittsburg coal-field is one of enormous output. The deposits of Lake Superior furnish the ores for its furnaces, and the railroad development is such that each enormous establishment now has its special railroad to fetch in the ores from Lake Erie, where they are brought by vessels. Across in Allegheny City, where most of these ore-bringing roads go out, about one hundred acres in the centre of the city are reserved for the attractive Allegheny Park, one portion rising in a very steep hill, almost at the edge of the Allegheny River. Upon its top, seen from afar, stands a Soldiers' Monument, a graceful column, erected in memory of four thousand men of Allegheny County who fell in the Civil War. Soldier statues guard the base, and look out upon the smokes and steam jets of the busy city below, and thousands climb up there to enjoy the grand view.

COAL, COKE AND GAS.

The four counties adjoining Pittsburg turn out over thirty millions of tons of bituminous coal in a year. To carry this coal away, besides railways, the city has about a million and a half of tonnage of river craft of various kinds, a greater tonnage than all the Mississippi River ports put together. Its coal boats go everywhere throughout the Western water ways, and two thousand miles down the Ohio and Mississippi to New Orleans. Its stumpy but powerful little tugs, with their stern-wheels, will safely convey fleets of shallow flatboats, sometimes over twenty thousand tons of coal being carried in a single tow. These flatboats are collected in the rivers about Pittsburg, waiting for the proper stage of water on the Ohio; and to regulate the depth at the city the curious movable dam was constructed at Davis's Island, four miles below Pittsburg, at a cost of \$1,000,000, the dam opening when necessary to let freshets through, and having a lock five hundred feet long and one hundred and ten feet wide to pass the boats. The

Monongahela River above Pittsburg has for miles a series of coal mines in the high bordering banks, the river being lined with coal "tipples," which load the flatboats; and it is also provided with a series of dams, which aid navigation and divide the channel into a succession of "pools." The very crooked Youghiogheny flows in at McKeesport, fifteen miles above Pittsburg, another river of coal mines, whose name was given as a signification of its crookedness by the matter-of-fact Indians, the word signifying "the stream flowing a contrary, roundabout course." This river comes northward out of the chief coke district of America, in the flanks of the long Chestnut Ridge, the Connellsville coke region sometimes turning out ten millions of tons annually from its ovens. Railways run in there on both river banks to Connellsville, a town of six thousand people, in the midst of the coke ovens, and about fifty-six miles south of Pittsburg.

Pittsburg is decreasing its use of natural gas for manufacturing, as the diminishing supply and greater distance it has to be brought are making it too costly for the iron and glass works, which are returning again to coal and coke, but the city is still said to use forty-five thousand millions of cubic feet in a year, mostly for domestic purposes. Pittsburg stands in a great but partly exhausted natural-gas district. The gas is stored under pressure beneath strata of rock, being set free when these are pierced. This is a gaseous member of the paraffin series, of which petroleum is a liquid member, and is mainly marsh-gas, the "fire-damp" of the miner. It originates in the decomposition of animal and vegetable life, and usually has but little odor, whilst its illuminating power is low, but in fuel value eight cubic feet equal one pound of coal. It was first used at Fredonia, New York, in 1821, for lighting purposes, being procured from a well. The natural-gas region is the part of Pennsylvania west of the Alleghenies, extending into New York, Ohio and West Virginia; and gas is also found in Indiana, Illinois, Kentucky and Kansas. It is held under enormous pressure within the pockets beneath the rocks, and when first reached in drilling, the tension has been known to equal a thousand pounds per square inch. It is not uncommon, when a well is drilled, to have all the tools and casing-pipe blown out, while an enormous thickness of masonry has to be constructed to hold down the cap that covers the well. Its use began in Pittsburg in 1886, the chief field of supply then being Murrys ville, about twenty miles east of the city, while there are also other fields southwest and east of Pittsburg. The pipes underlie all the streets, and a main route of supply is along the bed of the Allegheny River. There are said to be about sixteen hundred miles of pipes laid down to lead the gas to Pittsburg from the different fields.

PETROLEUM.

The great petroleum fields lie in and near the Pittsburg region, in the basin of the Allegheny and Ohio Rivers, and extend from New York southwest to West Virginia, and also into Ohio. This region has had enormous yields in different parts of the river basin, the wells, however, ultimately dwindling as their supplies are drawn out. The petroleum industry, which has been one of the greatest in Pennsylvania, has been gradually all absorbed by the Standard Oil Company, which is probably the most extensive industrial combination in America, and certainly the most powerful. Yet we are told that those financial magnates began their wonderful career with an aggregate capital of only \$24,000, largely borrowed money. There have been forty millions of barrels of petroleum taken from this great basin in a single year. The oil wells are bored in many places, south, southwest, north and northeast of Pittsburg. The "Panhandle Railroad," which crosses West Virginia to the Ohio, exhibits many of them. A branch of this railroad goes to Canonsburg, and thence to the town of Washington, on the old "National Road," thirty miles from Pittsburg. At Canonsburg was founded in 1773 Jefferson College, in a log cabin, which has now become the Jefferson Theological Seminary of the Presbyterian Church. Washington is a town of about four thousand people, rambling over a pleasant hilly region in Southwestern Pennsylvania, having as its chief institution Washington and Jefferson College, also a Presbyterian foundation, started in 1806 in what was then a remote Scotch-Irish colony beyond the mountains. Near this town in 1888 were struck the greatest petroleum wells the world ever knew. One of them, the Jumbo well, in sixty days after the first strike had poured out one hundred and forty thousand barrels of oil, flowing a steady circular stream of almost white oil, about five inches in diameter, at the rate of forty-two hundred gallons an hour. Another well, afterwards bored not far away, in its freshness of infancy poured out sixty-three hundred gallons an hour. Additional wells were bored with almost the same results; but they all afterwards dwindled, and finally ceasing a free flow, had to be pumped. This is the universal experience of all the oil regions, the "gushers," soon after the great strikes, giving out, as the store of petroleum in the reservoirs beneath becomes exhausted. But all this shows how enormous is the natural wealth of the Pittsburg district—oil, coal, coke and gas, with iron, steel and glass, electricity and railways, contributing to the wonderful prosperity.

The greatest petroleum field, however, was up the Allegheny River, in Northwestern Pennsylvania, and the first wells bored to obtain it were sunk at

Titusville, on Oil Creek, in 1859. The early settlers knew of the appearance of oil about the headwaters of the Allegheny in New York and Pennsylvania, and the name of Oil Creek was given a stream for this reason in Allegheny County, New York, and also to the one in Venango County, Pennsylvania. The Indians had long collected the oil on the shores of Seneca Lake in New York, a course that the white settlers followed, and it was for years sold as a medicine by the name of Seneca or Genesee oil. When its commercial value for illuminating purposes began to be recognized, Colonel E. L. Drake went to Titusville to see if it could be obtained in sufficient quantities. He bored the first well about a mile south of Titusville, and on August 26, 1859, the oil was struck at a depth of seventy-one feet. The drill suddenly sunk into the cavity of the rock beneath, and the oil rose within a few inches of the surface. A small pump was introduced which brought out four hundred gallons daily, and then a large pump, increasing the daily flow to a thousand gallons. Soon a steam-engine was applied, and the flow continued uninterrupted for weeks. Titusville had at the time three hundred people. Many wells were sunk in the neighborhood with varying success, and the product of the Oil Creek district became so large that the market could not absorb it, and at the beginning of 1861, with two thousand wells in operation, the price declined to twenty-five cents per barrel. The two great wells were the Empire, originally yielding twenty-five hundred barrels daily, and the Phillips, nearly four thousand barrels. In 1863 the production had slackened, but the uses had expanded, and prices rose proportionately. Vast fortunes were then rapidly made, and as soon squandered. In the first twelve years of the development of this district, which extended over about four hundred square miles, there were taken from some four thousand wells forty-two millions of barrels of oil, which were marketed for \$163,000,000. At first it was carried away by the railroads, of which several sent branches into the district, but there have since been laid extensive lines of pipes which convey it in various directions, and largely to New York and Philadelphia for foreign export. When this district was at the height of its yield it produced four hundred millions of gallons a year.

ASCENDING THE ALLEGHENY.

From Pittsburg, through bold and pleasing scenery, we ascend the Allegheny River, the broad channel flowing grandly around stately bends enclosed between high hills. Thirty miles above Pittsburg the Kiskiminetas comes in, and in a region of coal mines and furnaces is found the town of Kittanning, which retains the name of the Indian village standing there in Colonial days. This original

Indian village was attacked by Colonel Armstrong and three hundred troops at dawn on August 8, 1757, and the Indians, who sided with the French, refusing to surrender, they were pretty much all killed and their village burnt. Armstrong's name is preserved in the county. Beyond is Brady's Bend, a great curve of the river, and here are seen the derricks of many deserted oil wells, as the farther journey above for miles also discloses. This was the Modoc oil district. The Morrison well was struck in 1872, yielding five hundred barrels daily, and immediately a town was laid out, not inappropriately called Greece City, and it soon had a large population. This was a prolific oil region at one time, and back from the river were the well-known oleaginous towns of Modoc City, Karns City and Petrolia. The Allegheny River gradually leads us up to Venango County, which was the chief oil region. Franklin, the capital of the county, has about five thousand inhabitants, and is built at the mouth of French Creek, the site of the old French Fort Venango, which Indian word meant "a guiding mark on a tree." It stood on a commanding ridge, and was one of the chain of posts the French built from the lakes across to the Ohio, to hold their possessions, dating from 1753. The French had a large garrison there, but after Canada was captured the English got possession, and in 1763 it was the scene of a terrible massacre, the Indians taking it, murdering the entire garrison, and slowly roasting the commandant to death.

Five miles above, Oil Creek flows into the Allegheny, and here is Oil City, the petroleum headquarters. It has had a varying history, being once almost destroyed by flood and twice by fire, but maintains its supremacy and is a complete oil town—the air filled with petroleum odors, and the lower streets saturated with the fluid. On the Allegheny, nine miles from Oil City, is Oleopolis, and a short distance inland is Pithole City, which was one of the famous oil towns whose rise and decline were so phenomenal. A few farmers here tried to get a scanty subsistence from the rocky and almost barren soil, where, on a hill, there was a fissure two to four feet wide, called the "pithole," from which came out at intervals hot air and bad smells. This was on the Holmden farm, which had been nominally valued at five dollars an acre. Somebody thought he detected the smell of oil among the odors coming up, and a well was bored. It struck oil in the winter of 1864-65, and was the greatest strike made down to that time—the United States Well yielding seven thousand barrels daily. Multitudes flocked thither, and in six months Pithole City arose in the wilderness with fifteen thousand inhabitants, two theatres, an opera house, a daily newspaper, and seventy-two hotels of various degrees. Numerous wells were sunk, and the oil sold at \$5 to \$8 per barrel, being readily sent to the

seaboard. The Holmden farm was soon sold for \$4,000,000. There were some amazing speculative trades made. The story is told of a well striking oil and a speculative bystander at once buying a three-fourths interest in it for \$18,000, agreeing to pay the money next day. Turning away from the seller, he met a man seeking such an investment, and promptly resold his interest for \$75,000, receiving immediate payment. The yield of this region was so prolific that railroads and pipe lines were soon constructed to carry the oil away. Pithole had its great boom in the autumn of 1866, wells being bored in every direction, and real estate fetching enormous prices. One old fellow who had a few acres of arid land in the centre of the excitement sold his farm and hovel for \$800,000, paid him on the spot in \$1000 notes; and then he sorrowfully bemoaned, as he took a last look at the hovel he had occupied all his life, "Now I haint got any home." The rise of this wonderful town was rapid, and its downfall came all too soon. The oil supply became exhausted, the speculators left, the inhabitants dwindled in number, and by 1870 Pithole had reverted almost to its original condition. The chief hotel, which had cost \$31,000 to build, was afterwards sold for \$100, and the population had declined in 1873 to nine families.

The valley of Oil Creek is filled with derricks and oil tanks, having a few pumping engines at work, but most of the derricks are over abandoned wells. Eighteen miles up Oil Creek is Titusville, and when the oil yield was at its height, about 1865, this valley had a population of seventy-five thousand people. Titusville is pleasantly built in the broadened interval, surrounded by hills, the streets being wide and straight, and the residences comfortable, each in its garden enclosure. There are oil refineries, and iron works which make engines, tubing and other supplies; and the town, which has eight thousand people, is a headquarters for the Standard Oil Company. Twenty-seven miles farther northward is Corry, a prominent railroad centre, at the northern entrance to the Pennsylvania "Oil Dorado," as the region has been popularly called. Its name of Corry was that of the farmer who originally cultivated the soil when the place became a railway station in 1861, and the location of oil refineries then began its prosperity. There are now about six thousand inhabitants. It is within a short distance of the New York State boundary, and marks the northern limit of the Pennsylvania oil region. This whole district, once the prominent petroleum field of Pennsylvania, has been eclipsed, however, by other and more prolific oil basins. Fortunes were made here, but most of the wealth passed away; and the history of the Pennsylvania petroleum trade and its vicissitudes, with the absorption of everything of value by the Standard Oil Company, has emphasized the truth so pointedly told by Robert Burns, that "The best laid schemes o' mice

an' men gang aft a-gley." Its wonderful tide of prosperity and its subsequent ebb recall Shelley's lines "To Men of England":

The seed ye sow another reaps;
The wealth ye find another keeps;
The robes ye weave another wears;
The arms ye forge another bears."

VISITING THE SUNNY SOUTH.

V.

VISITING THE SUNNY SOUTH.

Sir Walter Raleigh—Roanoke Island—Virginia Dare—Potatoes—Tobacco—Carolina—Cape Hatteras—Cyclones—Wilmington—Fort Fisher—Blockade Running—Charleston—Palmetto Trees—John C. Calhoun—Fort Moultrie—Osceola's Grave—Fort Sumter—Opening of the Civil War—The Swamp Angel—St. Michael's Church—Port Royal—Savannah—General Oglethorpe—Count Pulaski—Fort Pulaski—Bonaventure Cemetery—Okifenokey Swamp—Jacksonville—The Alligator—Oranges—Land of Flowers—Juan Ponce de Leon—Ferdinand de Soto—The Huguenots—Pedro Menendez—Dominique de Gourgues—Florida Peculiarities—Cumberland Sound—St. Mary's River—Cumberland Island—Jekyll Island—Amelia Island—Fernandina—Dungeness—General Greene—Light Horse Harry—St. Augustine—Matanzas River—Anastasia Island—Coquina—Fort San Marco—Fort Marion—Grand Hotels—Dade's Massacre—Coa-coo-chee, the Wildcat—Ormond—Daytona—New Smyrna—The Southern Cassadega—Indian River—Titusville—Rockledge—Fort Pierce—Jupiter Inlet—Palm Beach—Miami—Biscayne Bay—St. John's River—Mandarin—Palatka—Ocklawaha River—Lake Apopka—Lake Eustis Region—Ocala—The Silver Spring—Navigating the Ocklawaha—Lake George—Volusia—Lake Monroe—Enterprise—Sanford—Winter Park—Orlando—Lake Tohopekaliga—Kissimmee River—Lake Okeechobee—The Everglades—Lake Arpeika—The Seminoles—Suwanee River—Cedar Key—Tallahassee—Achille Murat—Wakulla Spring—Appalachicola—Pensacola—Homosassa—Tampa—Charlotte Harbor—Punta Gorda—Caloosahatchie River—Fort Myers—Cape Romano—Cape Sable—Florida Keys—Coral Building—The Gulf Stream—Key West—Fort Taylor—Sand Key—Dry Tortugas—Fort Jefferson—Florida Attractions.

CAROLINA.

Sir Walter Raleigh, of chivalrous memory, sent the first English colony to America in the sixteenth century. He was a half-brother of Sir Humphrey Gilbert, the English explorer, and had previously accompanied Gilbert to Newfoundland. He sent out an expedition in 1584, which selected Roanoke Island, south of the Chesapeake, for a settlement, and for this enterprise Queen Elizabeth knighted Raleigh, gave him a grant of the whole country, and directed that the new land be named in her honor, Virginia. In 1585-86 colonizing expeditions were sent to Roanoke, but they did not prosper. The colonists

quarrelled with the Indians, and in the latter year the Governor returned to England for provisions and reinforcements, leaving behind with the colony his daughter, Mrs. Dare, and a granddaughter, nine days old, Virginia Dare, the first English child born in the new land. Then came the Spanish Armada to conquer England, and the long war with Spain. Nobody went to succor the little band of exiles on Roanoke Island for three years, and when they did, the settlement was obliterated, the hundred colonists and little Virginia Dare had disappeared, and no tidings of them were ever obtained. Thus perished Raleigh's colony; and, his means being exhausted, he was discouraged and sent no more expeditions out to America. His enterprise failed in making a permanent settlement, but it gave two priceless gifts to Europe. The returning Governor took back to England the potato, which Raleigh planted on his Irish estate and which has proved the salvation of old Erin, and also the Virginia tobacco, which he taught the people to smoke, and the fragrant weed became the solace of the world.

No further attempts at colonization were made until the seventeenth century, when new grants were issued, and the country was named Carolina in honor of King Charles I. The Atlantic Coast south of the Chesapeake Bay entrance is low and bordered by sand beaches, which for most of the distance in front of North Carolina are far eastward of the mainland, with broad sounds and river estuaries between. These long and narrow beaches protrude in some cases a hundred miles into the ocean and form dangerous shoals, the extensive Albemarle and Pamlico Sounds being enclosed by them, the former stretching fifty miles and the latter seventy-five miles into the land. Out in front of Pamlico Sound projects the shoulder of Cape Hatteras into the Atlantic, the outer point of a low, sandy island, with shoals extending far beyond it, and marked by the great beacon of this dangerous coast, a flashing light one hundred and ninety feet high. Here is the principal storm factory of the southern coast, noted for cyclonic disturbances and dreaded by the mariner. Upon the outer Diamond Shoals the Government has long tried in vain to erect a lighthouse. A lightship is kept there, but is frequently blown from her moorings and drifts ashore. The Gulf Stream, coming with warm and speedy current up from Florida, is here diverged out into the ocean by the shoulder of Hatteras; and, similarly, the whirling West India cyclones of enormous area come along with their resistless energy, destroying everything in their paths. In the terrific hurricane of the autumn of 1899 a wind velocity of one hundred and sixty miles an hour was reached momentarily, and the anemometer at Hatteras was blown down after having recorded a velocity of one hundred and twenty miles. The actual force exerted by one of these great cyclones in its work of devastation, which uproots trees, demolishes buildings

and strews the coast with wrecks, has been calculated as equalling one thousand million horse-power.

WILMINGTON AND FORT FISHER.

The interior of North Carolina adjoining the Sounds is largely swamp land, and the broad belt of forest, chiefly pines, which parallels the coast all along the Atlantic seaboard. Through this region the railway extends southward from Virginia past Weldon to Wilmington, an uninteresting route among the swamps and pine lands, showing sparse settlement and poor agriculture, the wood paths exhibiting an occasional ox-team or a stray horseman going home with his supplies from the cross-roads store, a typical representative of the "tar-heels of Carolina." The railway crosses the deep valley of Roanoke River, and then over the Tar and Neuse Rivers, traversing the extensive district that provides the world's greatest supply of naval stores—the tar, pitch, turpentine, rosin and timber that are so largely shipped out of the Cape Fear River from Wilmington. This is the chief city of North Carolina, having about twenty thousand people, and is located on the Cape Fear River twenty-six miles from its mouth. The city spreads along the eastern shore upon the peninsula between it and the ocean. The first settlement antedates the Revolution, when the inhabitants, who were sturdy patriots, drove out the royal Governor and made Fort Johnson, at the mouth of the river, an American stronghold. Upon the secession of the Carolinas in 1860-61 this fort was occupied by the Confederates and replaced by the larger work on Federal Point, between the river and the sea, known as Fort Fisher. Owing to the peculiar location and ease of entrance, the Cape Fear River became famous in the Civil War as a haven for blockade-runners, the effective defense made by Fort Fisher fully protecting this traffic. As the Union blockade of the Southern harbors became more completely effective with the progress of the war, this finally was about the only port that could be entered, and an enormous traffic was kept up between Wilmington and Nassau, on the British island of New Providence, in the Bahamas, not far away, some three hundred fleet foreign steamships safely running the blockade into Cape Fear River during 1863 and 1864. The notoriety of this traffic, from which enormous profits were made, became world-wide, and it was decided late in 1864 that Fort Fisher had to be captured, in order to make the Southern blockade entirely effective. A joint land and naval attack was made by General Butler and Admiral Porter in December, 1864, but they were obliged to retire without seriously damaging the fort. Then General Butler ineffectively attempted to blow up the fort by exploding a

powder-boat near it. Finally a new expedition was landed in January, 1865, under General Terry, and in coöperation with the navy, which made a fierce bombardment, they captured the fort on the 15th, after severe loss, the works being partially destroyed the following day by the accidental explosion of the powder magazine. This capture ended the blockade-running at Wilmington, and had much to do with precipitating the fall of Richmond in the following April.



On the Ashley, near Charleston, S. C.

CHARLESTON AND FORT SUMTER.

The railway from Wilmington to the South at first goes westward through a region largely composed of swamps, and then entering South Carolina turns southward past Florence to Charleston. The country is a variation of pine barrens and morass, sparsely inhabited, but raising much cotton, with many bales brought to the stations for shipment. There is a much larger population of blacks than of whites. Charleston, the metropolis of South Carolina, is an active seaport with sixty-five thousand inhabitants, having a good export trade in cotton, timber, naval stores, rice, fruits and phosphate rock, of which there are extensive deposits on Ashley River nearby. It is a low-lying city, built upon a peninsula between the Ashley and Cooper Rivers, just inland from the ocean, and having a good harbor. Its many wooden houses are varied by more pretentious ones of brick and stone, but there is an air of decadence produced by the traces still remaining of the earthquake of 1886, which destroyed the greater part of the buildings and killed many people. The dwelling architecture of Charleston presents the tropical features of open verandas, spacious porticos and broad windows looking out upon gardens in which the palmetto tree grows, typical of South Carolina, the "Palmetto State." At the point of the peninsula between the rivers is the Battery, a park and popular promenade overlooking the harbor, with

Fort Sumter down on its little shoal-like island, seen as a small dark streak upon the distant horizon. The first settlements in this part of South Carolina were made on the west bank of Ashley River, but the town, which had been named in honor of King Charles II., in 1680 was transferred to its present site. Charleston was prominent in the Revolution, its troops under Colonel Moultrie repelling a British attack upon Sullivan's Island in 1776; but the city was captured by Sir Henry Clinton in 1780 after an obstinate defense. Before the Civil War it was the chief cotton-shipping port of America, though it is now surpassed by the Gulf ports and by Savannah. The great memory in the city of that time of its greatest prosperity is of the apostle of "State Rights," the South Carolina statesman, John C. Calhoun, who died in 1850. His statue stands in Citadel Square, and his grave is in St. Philip's churchyard.

The broad estuary of Charleston harbor is completely landlocked, and has an entrance from the sea about a mile wide. On the southern side is Fort Moultrie, which was enlarged from the battery that repulsed the British attack in 1776, on Sullivan's Island, this now being a favorite summer resort, and dotted with wooden cottages facing the sea. Just behind the fort is the grave of Osceola, the famous chief of the Seminoles, who long carried on war in the Florida everglades, but was captured and brought a prisoner to Fort Moultrie, dying in 1838. Fort Sumter, three miles below Charleston, stands upon a shoal of about three acres, out in mid-channel, which is protected from the water encroachment by stone rip-rapping. It was faced with brick during the Civil War, but the work has since been modernized. At the opening of the war, Major Anderson occupied this fort with the small force of seventy-five men, which, after the secession of South Carolina from the Union, December 20, 1860, had been transferred thither from Fort Moultrie, the State troops immediately seizing Moultrie and all the other forts around the harbor, and the Federal public buildings in Charleston. They also constructed new batteries on Morris Island, the nearest land to Fort Sumter. On January 9, 1861, the Government at Washington sent the steamer "Star of the West" into the harbor with provisions and a reinforcement of two hundred and fifty troops. The first shot of the Civil War was on that day fired at her from Morris Island, and the ship being struck by this and subsequent shots, her commander abandoned the project and withdrew. There was a good deal of negotiation and delay afterwards, the Government, on April 8th, finally determining to provision Fort Sumter, as Anderson's supplies would be exhausted on the 15th, and so informing the Governor of South Carolina. On the 11th, General Beauregard, commanding the State forces, demanded the surrender of the fort, which was refused. Major Anderson was notified early next morning

that the fort would be fired upon in one hour, and cannonading began at 4.20 A.M. on the 12th. A fleet of vessels appeared off the harbor at noon with provisions, exchanged signals with the fort, but made no attempt to land, and on the 13th terms of surrender were arranged by which Major Anderson and his little command marched out on the 14th with the honors of war, saluting the American flag with fifty guns. This bombardment and evacuation set the North in a blaze of patriotic excitement and began the Civil War.

The naval forces of the United States attacked Fort Sumter in April, 1863, but were repulsed, the monitor "Keokuk" being so seriously injured that she afterwards sunk. Subsequently, the Union troops landed on Morris Island, erected batteries, and in August partly destroyed the works at Sumter; and its bombardment, and also that of Charleston, continued with but brief intermission till the war closed in 1865. On Morris Island was set up the original "long-range gun," General Gillmore's "Swamp Angel" now adorning a drinking-fountain at Trenton, New Jersey; and its ability, until it unfortunately burst, to shoot its bolts into Charleston, then regarded as an almost impossible distance to carry a projectile, attracted the attention of gunnery experts throughout the world. Its conspicuous mark was the white spire of St. Michael's Church up in the beleaguered city. This famous old church, dating from 1752, was struck six times during these attacks and seriously damaged. It was also partly demolished by a cyclone in 1885, and nearly destroyed by the earthquake of 1886; but it has been since restored, and its prominent steeple commands a good view. Charleston, however, seems to have always been used to this sort of thing. Its statue of William Pitt in front of the City Hall had the right arm broken off by a British cannon-shot in 1780. But if the city is thus somewhat in dilapidation, its grand development of foliage and flowers gives a compensation. Everywhere in the suburbs and in the streets and gardens are seen magnificent azaleas, magnolias, camellias, and the famous live oak, which flourish in luxuriance and add to the charms of this restful South Carolina metropolis.

THE CITY OF SAVANNAH.

The seacoast of South Carolina and Georgia is composed largely of deeply indented bays, with many islands, tortuous bayous, and a labyrinth of water ways bordered by dense vegetation. Southward from Charleston harbor to the Savannah River many creeks provide a system of inland navigation and form fertile islands. There are two capacious Sounds, St. Helena and Port Royal, the latter being one of the finest harbors in the world, and the rendezvous of the

American North Atlantic naval squadron when in these waters. This was the place of first landing of the original South Carolina colonists before they went to the Ashley River, and its chief town now is Beaufort, on St. Helena Island. These coast islands raise the famous "sea-island cotton," and the whole lowland region produces prolific crops of rice. The adjacent land is generally swampy, and its chief industry, outside of cultivating the fields, is the working of the extensive phosphate deposits, which are manufactured into fertilizers. The railway, largely constructed on piles, passes through much marsh and morass, crosses swift-running dirty streams, and over the swamps and among the pine timber, varied by the oak, bay tree and laurel, which the humid atmosphere has hung with garlands of sombre gray moss and clusters of ivy and other creeping plants. The festooned moss, overrunning and often destroying the foliage of the trees, gives the scene a weird and ghostly appearance. The railway route is bordered by an apparently almost impenetrable jungle, the few settlements are widely separated, and population is sparse, seeming to be chiefly negroes dressed in ancient-looking clothing ornamented with patches. The few whites who appear are bilious and yellowish, their complexions and garb being alike of the butternut hue, while both races seem to talk the same dialect. Thus moving farther southward, the Carolina "tar-heels" are replaced by the "crackers" and "butternuts," looking as if they had been rolled for a generation in the clayey soils drained by the Edisto, Coosawhatchie and Savannah Rivers and their neighboring streams, and who, farther inland, are the "clay-eaters" of Georgia. Then crossing the Savannah River, the route is upon the level lowlands down its Georgia bank, and into the city of Savannah, arriving amid a vast collection of rosin and pitch barrels, cotton bales and timber.

Savannah—derived from the Spanish word *sabana*, a "meadow or plain"—is known popularly as the "Forest City," and is built upon a bluff along the river shore, eighteen miles from the sea. It has fifty thousand people and a large export trade in naval stores, rice, timber and cotton, in the latter export being second only to New Orleans. It received great impetus after the Civil War, owing to its excellent railway connections with the interior, and is now the chief port of the Southern Atlantic coast. The city extends upon a level sandy plain, stretching back from the bluff shore along the river, has broad streets crossing at right angles, with small parks at the intersections, and many trees border the streets and fill the parks, so that it is fairly embowered in foliage, thus presenting an attractive and novel appearance. This adornment makes Savannah the most beautiful city of the coast—the oak, palmetto and magnolia, with the holly, orange, creeping ivy and clustering vines, setting the buildings in a framework of

delicious green. The business quarter is along the bluff, where the ships moor alongside the storehouses, which have their upper stories on a level with the busy Bay Street at its top. Much of the present beauty of the city is due to the foresight of its founder who laid out the plan—General Oglethorpe, who selected this place in 1733 for the capital of his Province of Georgia, the youngest of the original thirteen colonies.

General James Edward Oglethorpe was a native of London and an officer in the British army, who, being of philanthropic tendencies, obtained a grant of the Province from King George for the purpose of providing an asylum for the poor debtors of England and a home for the Protestants of all nations. After founding the city and receiving a colony of Protestants from Salzburg, he visited England and brought out John and Charles Wesley in 1735, and got George Whitefield to come and preach to the colonists in 1737. War breaking out with Spain, he attacked Florida, carrying his invasion to the gates of St. Augustine, but was repulsed. He returned to England in 1743, but though he lived until 1785 as a retired general upon half-pay, he never revisited America. The British captured Savannah in the Revolution, and repulsed a combined French and American attempt to recapture it in 1779. In this attack Count Pulaski fell, and the spot, now Monterey Square, near the centre of the city, is marked by the Pulaski Monument, one of the noblest shafts in America. Count Pulaski is the patron saint of Savannah, and Fort Pulaski, named in his honor, guards the Savannah River entrance from the sea. During the Civil War, however, this fort was practically useless, as it was captured by the Unionists in 1862, and Tybee Roads, the harbor at the entrance, was hermetically sealed throughout the war by the blockading fleet. General Sherman's triumphant march through Georgia ended in December, 1864, at Savannah, and his headquarters are still pointed out, opposite Madison Square. Savannah has a fine pleasure-ground in Forsyth Park, with its wealth of trees and ornamental shrubbery, and the adjoining Parade Ground containing the Confederate Soldiers' Monument. The favorite route to the southern suburbs is the famous Thunderbolt Shell Road leading to Thunderbolt River, and noted for its avenues of live oaks draped with Spanish moss. Here is also the favorite burial-place, the Bonaventure Cemetery, where the graves and tombstones are laid out alongside passages embowered by live oaks, their wide-stretching, gaunt and angular limbs being richly garlanded with the gray moss and encircled by creeping ivy. The long vista views under these sombre archways have an elfish look, peculiarly appropriate for a city of the dead, and it would take little imagination to conjure up the spirits of the departed and see them wandering beneath these canopies of shrouds.

THE CITY OF JACKSONVILLE.

Southward from Savannah, the railway route to Florida renews the monotonous landscape of woods and swamps. For ninety miles it goes in an almost straight line southwest through the pine belt of Southern Georgia, crossing the Ogeechee and Altamaha Rivers to Waycross, and then, turning to the southeast, proceeds in another almost straight line for about an equal distance towards the coast, and crosses St. Mary's River into Florida. It traverses the edge of the noted Okifenokee Swamp of Georgia, the Indian "weaving, shaking, water," a moist and mushy region of mystery and legend, drained by the poetic Suwanee, the Indian "Echo river," which has been made the theme of a favorite melody. This stream flows through Florida into the Gulf of Mexico, while on the eastern side the extensive swamp overflows into the winding St. Mary's River leading to the Atlantic. To the southward, the pine woods of Florida grow out of a sandy soil nearly as level as a floor, in which almost every depression and fissure seems filled with water, and the balsamic odors of these pines, combined with the mildness of the winter climate, give an indication of the attractions which make Florida so popular as a resort for the Northern people. The route finally reaches the broad St. John's River at the Florida metropolis, Jacksonville, a Yankee city in the South, bearing the name of the famous President, General Andrew Jackson, and having thirty thousand population, largely of Northern birth. This is the centre of the railway system of Florida and of most of the business of the State, having a large export trade in timber, naval stores, phosphates, oranges and other Florida products. To the visitor, probably the first most forcible impression is made by the free growth of oranges along the streets and in the house gardens. The city stands upon the northern and outer bank of a magnificent bend of St. John's River, this noble stream, which flows northward from Southern Florida, being a mile wide, and sweeping around to the eastward at Jacksonville to reach the sea about twenty-five miles beyond, its navigation having been improved by dredging and constructing jetties to maintain a channel through the bar at the mouth. The business section is near the shore, and the railways come down to the wharves; while, as the curving river stretches away to the southward, the bank is lined with rows of fine suburban villas, occupied by the business men who have built their comfortable homes amid the oranges, oleanders, magnolias and banana trees. The river has low tree-clad shores, and far over on the opposite bank are more villas and orange groves.

Jacksonville is well supplied with hotels and lodging-houses, which accommodate the crowds of winter visitors from the North, and it spreads into

various suburban villages reached by steamboats and hard shell roads. It is the great *entrepôt* for Florida, standing at the northern verge, the salubrious and equable climate being the attraction, for frost is rare, and the winters are usually clear and dry and give a most magnificent atmosphere. Rows of splendid oaks line the streets, and form fine archways of green, giving a delicious shade. Besides the orange, the alligator is also a Jacksonville attraction, live ones being kept as pets, little ones sent northward in boxes for gifts, and dead ones of all sizes prepared for ornaments. This reptile is the type and emblem of Florida; his skin and teeth are worked into fantastic shapes, and his curious bones and formation do duty in the make-up of many "Florida curiosities." In fact, outside of the timber, which is most prolific, the best known Florida crops are the alligator and the orange. Although frosts have killed many in late years, yet the product of the orange trees is still large, Southern Florida containing the most famous orange groves, especially along the Indian River and on the lakes of the upper St. John's River, where they are usually planted on the southern borders of the lakes, so that the frost is killed by the winds carrying it over the water, and thus the orange trees are protected.

THE LAND OF FLOWERS.

In the early sixteenth century there flourished a valiant Spaniard of noble birth, a grandee of Aragon, who had taken part in the conquest of Grenada, Don Juan Ponce de Leon. He had accompanied Columbus on one of his American voyages, and in 1510 was appointed Governor of Puerto Rico. The bold Don Juan had become somewhat worn by a life of dangerous buccaneering and romantic adventure, and being rather advanced in years he was losing the attractiveness which had long added charms to his gallantries. From the Indians of Puerto Rico he heard of an island off to the northwestward, which they called Bimini, and he listened with wonder and constantly increasing interest to the tales they told of an extraordinary and miraculous spring which it contained that would restore youth to the aged and health to the decrepit—the "Fountain of Perpetual Youth." They described it as being in a region of surpassing beauty, and said there were found abundant gold and many slaves in this land of promise. The rugged old warrior was fired with the prospect of restored youth, and soon secured from the king a grant of Bimini. In March, 1513, he sailed with a large expedition from Puerto Rico, discovered some of the Bahama Islands, coasted along the mainland to latitude 30° 8' north, and on Easter Sunday, April 8th, landed a short distance south of St. John's River and took possession, calling

the country Florida, from "Pasqua Florida," the Spanish name for the day. He did not find the magic spring, however, but he did discover a fairy scene, a land filled with a profusion of fruits and flowers. Though he subsequently diligently searched for it, he unfortunately never found the miraculous fountain. He explored the Gulf Coast, and returned to the quest again in 1521, when he got into quarrels with the Indians, was mortally wounded in a combat, and went back to Cuba to die.

Another Spanish grandee, fired with zeal for gold and conquest, appeared upon the scene somewhat later in the sixteenth century. Ferdinand de Soto, a native of Jerez, whose only heritage was his sword and shield, had accompanied various expeditions to Darien and Nicaragua, and in 1532 joined Pizarro in the conquest of Peru, where he acquired great wealth, with which he returned to Spain. Soon after, being anxious for more adventure, he was appointed Governor of Cuba and Florida, and given a commission to explore and settle the Spanish possessions in the latter country, then including the whole northern coast of the Gulf of Mexico. In May, 1539, he sailed from Havana with a large fleet and six hundred men, coasted around Florida and landed at Tampa Bay on the Gulf side, where his explorations ashore began in July. Fabulous stories had been told him of the wealth of the country by those who had been there, and De Soto's plan was to go everywhere in search of gold. He captured Indians for guides, and found a Spaniard, Juan Ortiz, whom they had taken captive several years before, but who was now living with them as a friend, knew their language and became interpreter. Then De Soto, by his aid, began a most difficult exploration, advancing through thick woods, north and east, amid tangled undergrowth, over bogs and marshes, crossing rivers and lakes, fighting the Indians who resented his cruelties, for he made them his slaves and bearers of burdens, tortured and killed them if they resisted. But he found no gold, though he pushed steadily onward, and turning westward in the quest, his numbers growing smaller and the survivors weaker under the weight of their privations. He travelled a long distance, crossing Northern Florida and Georgia into the Carolinas, and probably to Tennessee, descending the Alabama River, and having a battle with the Indians near Mobile Bay in October, 1540; then turning again northward, crossing the Mississippi River, which he discovered in May, 1541, near the Chickasaw Bluffs, exploring it nearly to the mouth of the Missouri, and then turning southward he sailed down the river, and finally died of fever near the mouth of Red River in May, 1542. During the three years' wanderings nearly half his force had perished in battle, or of privation and disease. The Indians were in awe of him and believed him immortal, and a panic therefore seized his

surviving followers, who feared annihilation if the savages discovered that De Soto was dead. So they quietly buried him at night, from a boat in midstream, sinking the corpse in the great Father of Waters. Discouraged and almost hopeless, his followers managed to build some small vessels, and the next year arrived safely in Mexico.

Neither of these expeditions succeeded in colonizing Florida, but they left a feeling of hatred among the Indians, caused by the Spanish cruelties, which always afterwards existed. In 1564 some French Huguenots, led by René de Laudonnière, attempted making a settlement at the mouth of St. John's River, and built Fort Caroline there. News of this reached Spain, and in 1565 another colonization expedition was sent out under Don Pedro Menendez d'Aviles, which set sail from Cadiz, and on St. Augustine's Day, August 28th, landed not far from where Ponce de Leon had made his first invasion, and founded a colony which he named St. Augustine, in honor of his day of arrival. As soon as Menendez was established on shore he attacked the Huguenots at St. John's River, and hanged such of them as had escaped being killed in the battle, declaring that he did this because they were Protestants. Some of them who had been away from the fort at the time were afterwards shipwrecked near St. Augustine, and these he also captured and put to death. The French Fort Caroline was then garrisoned by the Spaniards, its name changed to Fort San Mateo, and they also fortified with redoubts both sides of the river entrance. The story of the atrocities of Menendez was received with indignation in France, but the King, controlled by intrigue, dared do nothing, such was his fear of the power of Spain.

Full vengeance was afterwards taken, however. Dominique de Gourgues, a French gentleman of Mont-de-Marsan, who hated the Spaniards with a mortal hatred, took up the quarrel, sold his inheritance, borrowed money, and equipped a small expedition of three vessels and one hundred and eighty men. He concealed his real object, and sailing for some time through the tropical seas, finally came to Cuba, when he first made known his purpose to his followers. He landed at St. Mary's River, opening communication with the Indians, and a joint attack upon the Spaniards to the southward was arranged. In May, 1568, the fort and redoubts at St. John's River were stormed and taken, a few Spaniards being captured alive, all the rest having been slain in the combat. Gourgues was shown nearby the trees whereon Menendez had hanged the French prisoners when he first took the fort, having placed over them the inscription "Not as Frenchmen, but as Lutherans." He hanged his Spanish prisoners on the same trees, and over them was also nailed an inscription, burned with a hot iron on a tablet of pine,

"Not as Spaniards, but as Traitors, Robbers and Murderers." Gourgues' mission of vengeance was fulfilled. His Indian allies demolished the fort and the redoubts at the mouth of the river. He then sailed home with his expedition, landing at Rochelle on the day of Pentecost, where the Huguenots greeted him with all honor, and whilst he was scorned at court and lived for some years in obscurity, Queen Elizabeth showed him great favor; and as he was going overland to join the army of Portugal to once more fight his enemies, the Spaniards, he fell ill at Tours and died. The French made no more attempts at settlement in Florida, and the Spaniards afterwards possessed it, though frequently being at war with the English. Spain finally ceded the "Land of Flowers" to the United States, which took final possession in 1821.

SOME FLORIDA PECULIARITIES.

Florida is a strange region, yet most attractive. The traveller regards its surface as mainly a monotonous level of forest and swamp, with fruit and floral embellishments, but it in fact rises by an almost insensible ascent from the coast towards the interior, where there is a central summit ridge all along the peninsula of about three hundred feet elevation, covered with pine woods. Most of the surface, however, is but a few feet above the sea-level, these "flatlands," as they are called, being grass-grown savannahs, pine woods, swamps and cabbage-palm thickets. The southern part of the peninsula is the region of the everglades, which have been formed by successive dykes of coral, built by the industrious little insect long ago. The upper part of this region is occupied by the extensive but shallow waters of Lake Okeechobee, which merges insensibly into the everglades south and east, the Seminoles calling this grass-grown and spongy region, which is still the abode of some remnants of the tribe, Pa-ha-yo-kee, meaning "much grass in water." These everglades are penetrated in all directions by tortuous water channels of slight depth; and at frequent intervals in the whole district there are wooded islands possessing fertile soils and covered with dense tropical vegetation. These islands are said to have been surrounded by the sea in bygone ages, and they then stood in the same relation to the mainland as do the present Southern Florida reefs and keys. Wide tracts of cypress swamp separate the everglades from the Gulf of Mexico, while in Southern Florida they approach within a few miles of the Atlantic Coast, being separated by an intervening dyke of coral, crossed by frequent streams of rapid current, for the everglades are far from being stagnant swamps. There are also many other extensive swamps in the State.

The Florida seacoast is usually protected by sand beaches which are quite hard, and are separated from the mainland by interior lagoons. The mangrove and the coral, constantly growing, are ever encroaching, however, on the sea-waters, and thus Florida seems to have been constructed. The country is full of water courses, lakes and springs, some of the latter being regarded as among the most remarkable in the world, the famous Silver Spring near Ocala being estimated as discharging three hundred millions of gallons daily. There are countless springs along the coasts, and one of these bursts up in the sea near St. Augustine, two miles off shore, with a torrent so vigorous that the ocean waves break over the column of fresh water as if it were a sunken reef. Scientific investigators are amazed at the vast amounts of water everywhere visible and discharged from these springs, and with only the narrow and low peninsula for a watershed, the problem as to where the vast water supply comes from baffles solution. Some of the Florida lakes are subject to remarkable fluctuations of level, and one of them, Lake Jackson, ran suddenly dry at the time of the Charleston earthquake in 1886, but after a few weeks the water began returning, and it soon resumed its natural proportions.

CUMBERLAND SOUND.

The memory of the Duke of Cumberland, son of King George II., the victor of the battle of Culloden, in Scotland, where he defeated the Pretender in 1746, is preserved in America in the name of Cumberland Sound, the finest harbor on the Southern Atlantic Coast. St. Mary's River, coming out of Okifenokee swamp to make the northern boundary of Florida, flows an erratic course, boxing the compass in every direction until it finally heads eastward and debouches in Cumberland Sound, among a group of islands forming a large landlocked harbor. This river and sound, the boundary between Georgia and Florida, were, prior to the Revolution, a disputed frontier between the English and the Spaniards. To the northward of the entrance from the sea is Cumberland Island in Georgia, then comes Jekyll Island, with its magnificent club-house and elaborate cottages, and then St. Simon's Bay, having as its chief port the busy lumber-shipping town of Brunswick. To the southward of the Cumberland entrance is Amelia Island in Florida. The sound behind Amelia and Cumberland Islands is a magnificent roadstead, capable of floating at safe anchorage an enormous fleet. Amelia Island is a long, narrow sand bank with much foliage upon it, stretching about fourteen miles down the Florida coast to Nassau Sound. On the sea front of this island is one of the finest sand beaches on the Atlantic. Behind it is the arm of

the sea known as Amelia River, and the port of Fernandina, thirty-six miles northeast of Jacksonville, having at the point of the island, guarding the entrance to its harbor, old Fort Clinch, a superannuated brick-work battery, formerly of great importance, but now of little use, though it was somewhat strengthened to meet the exigencies of the recent Spanish War.

The French Huguenots first came along here and settled, as they did at the St. John's River entrance, and they called the island Garde. They found here a powerful Indian tribe, whose chief, the "Cacique of Garde," their historian described as "handsome and noble," and his queen as "beautiful and modest," and the same authority says they had "five handsome daughters." The French were engaged in desultory quarrels with the Spaniards south of them at St. Augustine, and the young gallants of the colony, in the intervals of the warfare, alternately courted and jilted the Indian maidens, the result being a savage attack and massacre; and finally, between Indian and Spanish enmity, the settlement disappeared. But the English, made of sterner stuff, ultimately came along, settling Georgia, and giving British names to the islands, the rivers and the Sound, which they still retain. For a long time this was disputed territory between the English and the Spaniards, the latter claiming everything northward to Carolina. General Oglethorpe marched through here to attack St. Augustine, and in 1763 the British held Amelia Island, extending the little fort to almost its present proportions, and laying out a town behind it, while to the southward the Countess of Egmont established an indigo plantation, which flourished for a brief period. Spain ultimately got the island, and it came into American possession with Florida in 1821. A little town with sandy streets, a pretty park, much foliage, delicious air bringing the balsam of the pines and the tonic of the sea, and hotels accommodating the influx of winter visitors, make up the Fernandina of to-day. Its beach on the ocean front, more than a mile away, is one of the finest in existence, hard as a floor, level and broad, stretching as far as eye can see, and having a grand surf booming upon it.

On Cumberland Island is the estate of Dungeness. General Nathaniel Greene of Rhode Island, one of Washington's most trusted officers, was the commander of the Revolutionary armies in the South in 1780-81 which drove the British out of that section, gained the victory of Cowpens in South Carolina, and compelled the withdrawal of Cornwallis to Yorktown, which ended in his surrender. After the close of the war, in gratitude for his great services, the people of Georgia presented him with this estate of about ten thousand acres. He made it his home for a time, but it afterwards passed away from his family, and being neglected,

the old coquina stone mansion was burnt. The house has since been reconstructed, and a picturesque avenue of moss-hung live oaks a mile long stretches over the island near it to the sea. In a little cemetery on the estate are the graves of General Greene's widow and daughter. Here is also the grave of "Light Horse Harry" of the Revolution (the father of General Robert E. Lee), who died abroad in 1818. He had visited and loved Dungeness, and requested to be buried there. Oaks and palmettos embower these modest graves, which are carefully preserved.

ANCIENT ST. AUGUSTINE.

St. Augustine, thirty-six miles southeast of Jacksonville, on the seacoast, is the oldest city in the United States, founded by Menendez in 1565, and existing to this day with the characteristics of a Spanish town of the sixteenth century, which have been also reproduced in the architecture of most of the newer buildings. A small inlet from the ocean, about fifteen miles south of the mouth of St. John's River, stretches its arms north and south, the latter arm, called Matanzas River, seeking the sea again about eighteen miles below. It thus forms Anastasia Island, sheltering the harbor like a breakwater, and behind it the city is built, being protected by a sea-wall nearly a mile long, built of coquina or shell-stone. Another arm of the sea, called San Sebastian River, is a short distance inland, so that the town site is really upon a peninsula. About five thousand people reside permanently in St. Augustine, a few of Spanish descent, and more of them the offspring of a colony of Minorcans who came in 1769, but in winter the Northern visitors to the palatial hotels swell the population to over ten thousand. The town is built on a level sandy plain, and the older streets are narrow, being only a few feet wide and without sidewalks. The projecting balconies of some of the ancient houses almost touch those opposite. The old streets are paved with coquina and the old houses are built of it, this curious shell-limestone, quarried on Anastasia Island, hardening upon exposure to the air. A few streets running north and south, crossed by others at right angles, and a broader front street bordered by the sea-wall which makes a fine promenade, compose the town. This sea-wall of coquina is capped with granite, and was built after the American occupation of the city. At its northern end is Fort Marion and at the southern end St. Francis Barracks, the United States military post, so named because it occupies the site of the old Convent of St. Francis, having some of its coquina walls incorporated in the present structure. The harbor in front, which in past centuries sheltered so many Spanish fleets and those of

Spanish enemies as well, is now chiefly devoted to yachting.

When Menendez and his Spaniards first landed they built a wooden fort commanding the harbor entrance, surrounded by pine trees, which they named San Juan de Pinos. This was afterwards replaced by Fort San Marco, constructed of coquina, which was nearly a hundred years building, and was finished in 1756. Upon the transfer of Florida to the United States this became Fort Marion. It is a well-preserved specimen of the military architecture of the eighteenth century, built on Vauban's system, covering about four acres, with bastions at the corners, each protected by a watch-tower, and is surrounded by a moat, the walls being twenty-one feet high. The fort is in reasonably good preservation, and is said to have been constructed mainly by the labor of Indians. It took so long to build and cost so much under the wasteful Spanish system that one sovereign wrote that it had almost cost its weight in gold; yet it was regarded then as supremely important to be finished, being the key to the Spanish possession of Florida. Over the sally-port at the drawbridge are carved the Spanish arms and an inscription recording the completion of the fort in 1756, when Ferdinand VI. was King of Spain and Don Heredia Governor of Florida. It mounted one hundred of the small guns of those days, and the interior is a square parade ground, surrounded by large casemates. Upon each side of the casemate opposite the sally-port is a niche for holy water, and at the farther end the Chapel. Dungeons and subterranean passages abound, of which ghostly tales are told. This fort is the most interesting relic of the ancient city, a picturesque place, with charms even in its dilapidation.

There are other quaint structures in this curious old town. A gray gateway about ten feet wide, flanked by tall square towers, marks the northern entrance to the city, the ditch from the fort passing in front of it. In one of the streets is the palace of the Spanish Governors, since changed into a post-office. The official centre of the city is a public square, the Plaza de la Constitucion, having a monument commemorating the Spanish Liberal Constitution of 1812, and also a Confederate Soldiers' Monument. This square fronts on the sea-wall, and alongside it and stretching westward is the Alameda, known as King Street, leading to the group of grand hotels recently constructed in Spanish and Moorish style, which have made modern St. Augustine so famous. These are the Ponce de Leon, the Alcazar and the Cordova, with the Casino, adjoined by spacious and beautiful gardens. These buildings reproduce all types of the Hispano-Moorish architecture, with many suggestions from the Alhambra. The Ponce de Leon, the largest, is three hundred and eighty by five hundred and twenty feet, enclosing

an open court, and its towers rise above the red-tiled roofs to a height of one hundred and sixty-five feet, the adornments in colors being very effective. To the southward of the town, adjoining the barracks, is the military cemetery, where a monument and three white pyramids tell the horrid story of the Dade massacre during the Seminole War. Major Dade, a gallant officer, and one hundred and seven men, were ambushed and massacred by eight hundred Indians in December, 1835, and their remains afterwards brought here and interred under the pyramids. Opposite the barracks is what is claimed to be the oldest house in the United States, occupied by Franciscan monks from 1565 to 1580, and afterwards a dwelling. It has been restored, and contains a collection of historical relics.

St. Augustine has had a chequered history. In 1586, Queen Elizabeth's naval hero, Sir Francis Drake, sailing all over the world to fight Spaniards, attacked and plundered the town and burnt the greater part of it. Then for nearly a century the Indians, pirates, French, English and neighboring Georgians and Carolinians made matters lively for the harried inhabitants. In 1763 the British came into possession, but they ceded it back to Spain twenty years later, the town then containing about three hundred householders and nine hundred negroes. It became American in 1821, and was an important military post during the subsequent Seminole War, which continued several years. It was early captured by the Union forces during the Civil War, and was a valuable stronghold for them. This curious old town has many traditions that tell of war and massacre and the horrible cruelties of the Spanish Inquisition, the remains of cages in which prisoners were starved to death being shown in the fort. Its best modern story, however, is told of the escape of Coa-coo-chee, the Seminole chief, whose adventurous spirit and savage nature gained him the name of the "Wild Cat." The ending of the Seminole War was the signing of a treaty by the older chiefs agreeing to remove west of the Mississippi. Coa-coo-chee, with other younger chiefs, opposed this and renewed the conflict. He was ultimately captured and taken to Fort Marion. Feigning sickness, he was removed into a casemate giving him air, there being an aperture two feet high by nine inches wide in the wall about thirteen feet above the floor, and under it a platform five feet high. Here, while still feigning illness, he became attenuated by voluntary abstinence from food, and finally one night squeezed himself through the aperture and dropped to the bottom of the moat, which was dry. Eluding all the guards, he escaped and rejoined his people. The flight caused a great sensation, and there was hot pursuit. After some time he was recaptured, and being taken before General Worth, was used to compel the remnant of the tribe to remove to the West. Worth

told him if his people were not at Tampa in twenty days he would be killed, and he was ordered to notify them by Indian runners. He hesitated, but afterwards yielded, and the runners were given twenty twigs, one to be broken each day, so they might know when the last one was broken his life would pay the penalty. In seventeen days the task was accomplished. The tribe came to Tampa, and the captive was released, accompanying his warriors to the far West. This ended most of the Indian troubles in Florida, but some descendants of the Seminoles still exist in the remote fastnesses of the everglades.

THE FLORIDA EAST COAST.

All along the Atlantic shore of Florida south of St. Augustine are popular winter resorts, their broad and attractive beaches, fine climate and prolific tropical vegetation being among the charms that bring visitors. Ormond is between the ocean front and the pleasant Halifax River, its picturesque tributary, the Tomoka, being a favorite resort for picnic parties. A few miles south on the Halifax River is Daytona, known as the "Fountain City," and having its suburb, "the City Beautiful," on the opposite bank. New Smyrna, settled by Minorcan indigo planters in the eighteenth century, is on the northern arm of Indian River. Here are found some of the ancient Indian shell mounds that are frequent in Florida, and also the orange groves that make this region famous. Inland about thirty miles are a group of pretty lakes, and in the pines at Lake Helen is located the "Southern Cassadaga," or Spiritualists' Assembly. For more than a hundred and fifty miles the noted Indian River stretches down the coast of Florida. It is a long and narrow lagoon, parallel with the ocean, and is part of the series of lagoons found on the eastern coast almost continuously for more than three hundred miles from St. Augustine south to Biscayne Bay, and varying in width from about fifty yards to six or more miles. They are shallow waters, rarely over twelve feet deep, and are entered by very shallow inlets from the sea. The Indian River shores, stretching down to Jupiter Inlet, are lined with luxuriant vegetation, and the water is at times highly phosphorescent. Upon the western shore are most of the celebrated Indian River orange groves whose product is so highly prized. At Titusville, the head of navigation, where there are about a thousand people, the river is about, at its widest part, six miles. Twenty miles below, at Rockledge, it narrows to about a mile in width, washing against the perpendicular sides of a continuous enclosing ledge of coquina rock, with pleasant overhanging trees. Here comes in, around an island, its eastern arm, the Banana River, and to the many orange groves are added plantations of the

luscious pineapple. Various limpid streams flow out from the everglade region at the westward, and Fort Pierce is the trading station for that district, to which the remnant of the Seminoles come to exchange alligator hides, bird plumage and snake skins for various supplies, not forgetting "fire-water." Below this is the wide estuary of St. Lucie River and the Jupiter River, with the lighthouse on the ocean's edge at Jupiter Inlet, the mouth of Indian River.

Seventeen miles below this Inlet is Palm Beach, a noted resort, situated upon the narrow strip of land between the long and narrow lagoon of Lake Worth and the Atlantic Ocean. Here are the vast Hotel Royal Poinciana and the Palm Beach Inn, with their cocoanut groves, which also fringe for miles the pleasant shores of Lake Worth. Prolific vegetation and every charm that can add to this American Riviera bring a crowded winter population. The Poinciana is a tree bearing gorgeous flowers, and the two magnificent hotels, surrounded by an extensive tropical paradise, are connected by a wide avenue of palms a half-mile long, one house facing the lake and the other the ocean. There is not a horse in the settlement, and only one mule, whose duty is to haul a light summer car between the houses. The vehicles of Palm Beach are said to be confined to "bicycles, wheel-chairs and jinrickshas." Off to the westward the distant horizon is bounded by the mysterious region of the everglades. Far down the coast the railway terminates at Miami, the southernmost railway station in the United States, a little town on Miami River, where it enters the broad expanse of Biscayne Bay, which is separated from the Atlantic by the first of the long chain of Florida keys. Here are many fruit and vegetable plantations, and the town, which is a railway terminal and steamship port for lines to Nassau, Key West and Havana, is growing. Nassau is but one hundred and seventy-five miles distant in the Bahamas, off the Southern Florida coast, and has become a favorite American winter tourist resort.

ASCENDING ST. JOHN'S RIVER.

The St. John's is the great river of Florida, rising in the region of lakes, swamps and savannahs in the lower peninsula, and flowing northward four hundred miles to Jacksonville, then turning eastward to the ocean. It comes through a low and level region, with mostly a sluggish current; is bordered by dense foliage, and in its northern portion is a series of lagoons varying in width from one to six miles. The river is navigable fully two hundred miles above Jacksonville. The earlier portion of the journey is monotonous, the shores being distant and the landings made at long piers jutting out over the shallows from the villages and

plantations. At Mandarin is the orange grove which was formerly the winter home of Harriet Beecher Stowe; Magnolia amid the pines is a resort for consumptives; and nearby is Green Cove Springs, having a large sulphur spring of medicinal virtue. In all directions stretch the pine forests; and the river water, while clear and sparkling in the sunlight, is colored a dark amber from the swamps whence it comes. The original Indian name of this river was We-la-ka, or a "chain of lakes," the literal meaning, in the figurative idea of the savage, being "the water has its own way." It broadens into various bays, and at one of these, about seventy-five miles south of Jacksonville, is the chief town of the upper river, Palatka, having about thirty-five hundred inhabitants and a much greater winter population. It is largely a Yankee town, shipping oranges and early vegetables to the North; and across the river, just above, is one of the leading orange plantations of Florida—Colonel Hart's, a Vermonter who came here dying of consumption, but lived to become, in his time, the leading fruit-grower of the State. Above Palatka the river is narrower, excepting where it may broaden into a lake; the foliage is greener, the shores more swampy, the wild-fowl more frequent, and the cypress tree more general. The young "cypress knees" can be seen starting up along the swampy edge of the shore, looking like so many champagne bottles set to cool in the water. The river also becomes quite crooked, and here is an ancient Spanish and Indian settlement, well named Welaka, opposite which flows in the weird Ocklawaha River, the haunt of the alligator and renowned as the crookedest stream on the continent.



On the Ocklawaha

GOING DOWN THE OCKLAWAHA.

The Ocklawaha, the "dark, crooked water," comes from the south, by tortuous windings, through various lakes and swamps, and then turns east and southeast to flow into St. John's River, after a course of over three hundred miles. It rises in Lake Apopka, down the Peninsula, elevated about a hundred feet above the sea, the second largest of the Florida Lakes, and covering one hundred and fifty square miles. This lake has wooded highlands to the westward, dignified by the title of Apopka Mountains, which rise probably one hundred and twenty feet above its surface. To the northward is a group of lakes—Griffin, Yale, Eustis, Dora, Harris and others—having clear amber waters and low shores, which are all united by the Ocklawaha, the stream finally flowing northward out of Lake

Griffin. This is a region of extensive settlement, mainly by Northern people. The mouth of the Ocklawaha is sixty-five miles from Lake Eustis in a straight line, but the river goes two hundred and thirty miles to get there. To the northward of this lake district is the thriving town of Ocala, with five thousand people, in a region of good agriculture and having large phosphate beds, the settlement having been originally started as a military post during the Seminole War. About five miles east of Ocala is the famous Silver Spring, which is believed to have been the "fountain of perpetual youth," for which Juan Ponce de Leon vainly searched. It is the largest and most beautiful of the many Florida springs, having wonderfully clear waters, and covers about three acres. The waters can be plainly seen pouring upwards through fissures in the rocky bottom, like an inverted Niagara, eighty feet beneath the surface. It has an enormous outflow, and a swift brook runs from it, a hundred feet wide, for some eight miles to the Ocklawaha.

This strange stream is hardly a river in the ordinary sense, having fixed banks and a well-defined channel, but is rather a tortuous but navigable passage through a succession of lagoons and cypress swamps. Above the Silver Spring outlet, only the smallest boats of light draft can get through the crooked channel. This outlet is thirty miles in a direct line from the mouth of the river at the St. John's, but the Ocklawaha goes one hundred and nine miles thither. The swampy border of the stream is rarely more than a mile broad, and beyond it are the higher pine lands. Through this curious channel, amid the thick cypress forests and dense jungle of undergrowth, the wayward and crooked river meanders. The swampy bottom in which it has its course is so low-lying as to be undrainable and cannot be improved, so that it will probably always remain as now, a refuge for the sub-tropical animals, birds, reptiles and insects of Florida, which abound in its inmost recesses. Here flourishes the alligator, coming out to sun himself at mid-day on the logs and warm grassy lagoons at the edge of the stream, in just the kinds of places one would expect to find him. Yet the alligator is said to be a coward, rarely attacking, unless his retreat to water in which to hide himself is cut off. He thus becomes more a curiosity than a foe. These reptiles are hatched from eggs which the female deposits during the spring, in large numbers, in muddy places, where she digs out a spacious cavity, fills it with several hundred eggs, and covering them thickly with mud, leaves nature to do the rest. After a long incubation the little fellows come out and make a bee-line for the nearest water. The big alligators of the neighborhood have many breakfasts on the newly-born little ones, but some manage to grow up, after several years, to maturity, and exhibit themselves along this remarkable river.

It is almost impossible to conceive of the concentrated crookedness of the Ocklawaha and the difficulties of passage. It is navigated by stout and narrow flat-bottomed boats of light draft, constructed so as to quickly turn sharp corners, bump the shores and run on logs without injury. The river turns constantly at short intervals and doubles upon itself in almost every mile, while the huge cypress trees often compress the water way so that a wider boat could not get through. There are many beautiful views in its course displaying the noble ranks of cypress trees rising as the stream bends along its bordering edge of swamps. Occasionally a comparatively straight river reach opens like the aisle of a grand building with the moss-hung cypress columns in long and sombre rows on either hand. At rare intervals fast land comes down to the stream bank, where there is some cultivation attempted for oranges and vegetables. Terrapin, turtles and water-fowl abound. When the passenger boat, after bumping and swinging around the corners, much like a ponderous teetotum, halts for a moment at a landing in this swampy fastness, half-clad negroes usually appear, offering for sale partly-grown baby alligators, which are the prolific crop of the district. Various "Turkey bends," "Hell's half-acres," "Log Jams," "Bone Yards" and "Double S Bends" are passed, and at one place is the "Cypress Gate," where three large trees are in the way, and by chopping off parts of their roots, a passage about twenty feet wide had been secured to let the boats through. There are said to be two thousand bends in one hundred miles of this stream, and many of them are like corrugated circles, by which the narrow water way, in a mile or two of its course, manages to twist back to within a few feet of where it started. At night, to aid the navigation, the lurid glare of huge pine-knot torches, fitfully blazing, gives the scene a weird and unnatural aspect. The monotonous sameness of cypress trunks, sombre moss and twisting stream for many hours finally becomes very tiresome, but it is nevertheless a most remarkable journey of the strangest character possible in this country to sail down the Ocklawaha.

LOWER FLORIDA AND THE SEMINOLES.

South of the mouth of the Ocklawaha the St. John's River broadens into Lake George, the largest of its many lakes, a pretty sheet of water six to nine miles wide and twelve miles long. Volusia, the site of an ancient Spanish mission, is at the head of this lake, and the discharge from the swift but narrow stream above has made sand bars, so that jetties are constructed to deepen the channel. For a long distance the upper river is narrow and tortuous, with numerous islands and swamps, the dark coffee-colored water disclosing its origin; but the Blue Spring

in one place is unique, sending out an ample and rich blue current to mix with the amber. Then Lake Monroe is reached, ten miles long and five miles wide, the head of navigation, by the regular lines of steamers, one hundred and seventy miles above Jacksonville. Here are two flourishing towns, Enterprise on the northern shore and Sanford on the southern, both popular winter resorts, and the latter having two thousand people. The St. John's extends above Lake Monroe, a crooked, narrow, shallow stream, two hundred and fourteen miles farther southeastward to its source. The region through which it there passes is mostly a prairie with herds of cattle and much game, and is only sparsely settled. The upper river approaches the seacoast, being in one place but three miles from the lagoons bordering the Atlantic. To the southward of Lake Monroe are the winter resorts of Winter Park and Orlando, the latter a town of three thousand population. There are numerous lakes in this district, and then leaving the St. John's valley and crossing the watershed southward through the pine forests, the Okeechobee waters are reached, which flow down to that lake. This region was the home of a part of the Seminole Indians, and Tohopekaliga was their chief, whom they revered so highly that they named their largest lake in his honor. The Kissimmee River flows southward through this lake, and then traverses a succession of lakes and swamps to Lake Okeechobee, about two hundred miles southward by the water-line. Kissimmee City is on Lake Tohopekaliga, and extensive drainage operations have been conducted here and to the southward, reclaiming a large extent of valuable lands, and lowering the water-level in all these lakes and attendant swamps.

From Lake Tohopekaliga through the tortuous water route to Lake Okeechobee, and thence by the Caloosahatchie westward to the Gulf of Mexico, is a winding channel of four hundred and sixty miles, though in a direct line the distance is but one hundred and fifty miles. Okeechobee, the word meaning the "large water," covers about twelve hundred and fifty square miles, and almost all about it are the everglades or "grass water," the shores being generally a swampy jungle. This district for many miles is a mass of waving sedge grass eight to ten feet high above the water, and inaccessible excepting through narrow, winding and generally hidden channels. In one locality a few tall lone pines stand like sentinels upon Arpeika Island, formerly the home of the bravest and most dreaded of the Seminoles, and still occupied by some of their descendants. The name of the Seminole means the "separatist" or "runaway" Indians, they having centuries ago separated from the Creeks in Georgia and gone southward into Florida. From the days of De Soto to the time of their deportation in the nineteenth century the Spanish, British, French and Americans made war with

these Seminole Indians. Gradually they were pressed southward through Florida. Their final refuge was the green islands and hummocks of the everglades, and they then clung to their last homes with the tenacity of despair. The greater part of this region is an unexplored mystery; the deep silence that can be actually felt, everywhere pervades; and once lost within the labyrinth, the adventurer is doomed unless rescued. Only the Indians knew its concealed and devious paths. On Arpeika Island the Cacique of the Caribs is said to have ruled centuries ago, until forced south out of Florida by the Seminoles. It was at times a refuge for the buccaneer with his plunder and a shrine for the missionary martyr who planted the Cross and was murdered beside it. This island was the last retreat of the Seminoles in the desultory war from 1835 to 1843, when they defied the Government, which, during eight years, spent \$50,000,000 upon expeditions sent against them. Then the attempt to remove all of them was abandoned, and the remnant have since rested in peace, living by hunting and a little trading with the coast settlements. The names of the noted chiefs of this great race—Osceola, Tallahassee, Tohopekaliga, Coa-coo-chee and others—are preserved in the lakes, streams and towns of Florida. Most of the deported tribe were sent to the Indian Territory. There may be three or four hundred of them still in the everglades, peaceful, it is true, yet haughty and suspicious, and sturdily rejecting all efforts to educate or civilize them. They celebrate their great feast, the "Green Corn Dance," in late June; and they have unwavering faith in the belief that the time will yet come when all their prized everglade land will be theirs again, and the glory of the past redeemed, if not in this world, then in the next one, beyond the "Big Sleep."

WESTERN FLORIDA.

Westward from Jacksonville, a railway runs through the pine forests until it reaches the rushing Suwanee River, draining the Okifenokee swamp out to the Gulf, just north of Cedar Key. This stream is best known from the minstrel song, long so popular, of the *Old Folks at Home*. Beyond it the land rises into the rolling country of Middle Florida, the undulating surface sometimes reaching four hundred feet elevation, and presenting fertile soil and pleasant scenery, with a less tropical vegetation than the Peninsula of Florida. Here is Tallahassee, the capital of the State, one hundred and sixty-five miles from Jacksonville, a beautiful town of four thousand population, almost embedded in flowering plants, shrubbery and evergreens, and familiarly known from these beauties as the "Floral City," the gardens being especially attractive in the season of roses.

The Capitol and Court-house and West Florida Seminary, set on a hill, are the chief public buildings. In the suburbs, at Monticello, lived Prince Achille Murat, a son of the King of Naples, who died in 1847, and his grave is in the Episcopal Cemetery. There are several lakes near the town, one of them the curious Lake Miccosukie, which contracts into a creek, finally disappearing underground. The noted Wakulla Spring, an immense limestone basin of great depth and volume of water, with wonderful transparency, is fifteen miles southward.

Some distance to the westward the Flint and Chattahoochee Rivers join to form the Appalachicola River, flowing down to the Gulf at Appalachicola, a somewhat decadent port from loss of trade, its exports being principally lumber and cotton. The shallowness of most of these Gulf harbors, which readily silt up, destroys their usefulness as ports for deep-draft shipping. The route farther westward skirts the Gulf Coast, crosses Escambia Bay and reaches Pensacola, on its spacious harbor, ten miles within the Gulf. This is the chief Western Florida port, with fifteen thousand people, having a Navy Yard and much trade in lumber, cotton, coal and grain, a large elevator for the latter being erected in 1898. The Spaniards made this a frontier post in 1696, and the remains of their forts, San Miguel and San Bernardo, can be seen behind the town, while near the outer edge of the harbor is the old-time Spanish defensive battery, Fort San Carlos de Barrancos. The harbor entrance is now defended by Fort Pickens and Fort McRae. Pensacola Bay was the scene of one of the first spirited naval combats of the Civil War, when the Union forces early in 1862 recaptured the Navy Yard and defenses. The name of Pensacola was originally given by the Choctaws to the bearded Europeans who first settled there, and signifies the "hair people."

THE FLORIDA GULF COAST.

The coast of Florida on the Gulf of Mexico has various attractive places, reached by a convenient railway system. Homosassa is a popular resort about fifty miles southwestward from Ocala. A short distance in the interior is the locality where the Seminoles surprised and massacred Major Dade and his men in December, 1835, only three soldiers escaping alive to tell the horrid tale. The operations against these Indians were then mainly conducted from the military post of Tampa, and thither were taken for deportation the portions of the tribe that were afterwards captured, or who surrendered under the treaty. When Ferdinand de Soto entered this magnificent harbor on his voyage of discovery and gold hunting, he called it Espiritu Sancto Bay. It is from six to fifteen miles wide, and

stretches nearly forty miles into the land, being dotted with islands, its waters swarming with sea-fowl, turtles and fish, deer abounding in the interior and on some of the islands, and there being abundant anchorage for the largest vessels. This is the great Florida harbor and the chief winter resort on the western coast. It was the main port of rendezvous and embarkation for the American forces in the Spanish War of 1898. The head of the harbor divides into Old Tampa and Hillsborough Bays, and on the latter and at the mouth of Hillsborough River is the city, numbering about twenty-five thousand inhabitants. The great hotels are surrounded by groves with orange and lemon trees abounding, and everything is invoked that can add to the tourist attractions. The special industry of the resident population is cigar-making. Port Tampa is out upon the Peninsula between the two bays, several miles below the city, and a long railway trestle leads from the shore for a mile to deep water. Upon the outer end of this long wharf is Tampa Inn, built on a mass of piles, much like some of the constructions in Venice. The guests can almost catch fish out of the bedroom windows, and while eating breakfast can watch the pelican go fishing in the neighboring waters, for this queer-looking bird, with the duck and gull, is everywhere seen in these attractive regions. An outer line of keys defends Tampa harbor from the storms of the Gulf. There are many popular resorts on the islands and shores of Tampa Bay, and regular lines of steamers are run to the West India ports, Mobile and New Orleans. All the surroundings are attractive, and a pleased visitor writes of the place: "Conditions hereabouts exhilarate the men; a perpetual sun and ocean breeze are balm to the invalid and an inspiration to a robust health. The landscape affords uncommon diversion, and the sea its royal sport with rod and gaff."

Farther down the coast is Charlotte Harbor, also deeply indented and sheltered from the sea by various outlying islands. It is eight to ten miles long and extends twenty-five miles into the land, having valuable oyster-beds and fisheries, and its port is Punta Gorda. Below this is the projecting shore of Punta Rassa, where the outlet of Lake Okeechobee, the Caloosahatchie River, flows to the sea, having the military post of Fort Myers, another popular resort, a short distance inland, upon its bank. The Gulf Coast now trends to the southeast, with various bays, in one of which, with Cape Romano as the guarding headland, is the archipelago of "the ten thousand islands," while below is Cape Sable, the southwestern extremity of Florida. To the southward, distant from the shore, are the long line of Florida Keys, the name coming from the Spanish word *cayo*, an island. This remarkable coral formation marks the northern limit of the Gulf Stream, where it flows swiftly out to round the extremity of the Peninsula and begin its northern

course through the Atlantic Ocean. Although well lighted and charted, the Straits of Florida along these reefs are dangerous to navigate and need special pilots. Nowhere rising more than eight to twelve feet above the sea, the Keys thus low-lying are luxuriantly covered with tropical vegetation. From the Dry Tortugas at the west, around to Sand's Key at the entrance to Biscayne Bay, off the Atlantic Coast, about two hundred miles, is a continuous reef of coral, upon the whole extent of which the little builder is still industriously working. The reef is occasionally broken by channels of varying depth, and within the outer line are many habitable islands. The whole space inside this reef is slowly filling up, just as all the Keys are also slowly growing through accretions from floating substances becoming entangled in the myriad roots of the mangroves. The present Florida Reef is a good example of the way in which a large part of the Peninsula was formed. No less than seven old coral reefs have been found to exist south of Lake Okeechobee, and the present one at the very edge of the deep water of the Gulf Stream is probably the last that can be formed, as the little coral-builder cannot live at a greater depth than sixty feet. The Gulf Stream current is so swift and deep along the outer reef that there is no longer a foundation on which to build.

The Gulf Stream is the best known of all the great ocean currents. The northeast and southeast trade-winds, constantly blowing, drive a great mass of water from the Atlantic Ocean into the Caribbean Sea, and westward through the passages between the Windward Islands, which is contracted by the converging shores of the Yucatan Peninsula and the Island of Cuba, so that it pours between them into the Gulf of Mexico, raising its surface considerably above the level of the Atlantic. These currents then move towards the Florida Peninsula, and pass around the Florida Reef and out into the Atlantic. It is estimated by the Coast Survey that the hourly flow of the Gulf Stream past the reef is nearly ninety thousand million tons of water, the speed at the surface of the axis of the stream being over three and one-half miles an hour. To conceive what the immensity of this flow means, it is stated that if a single hour's flow of water were evaporated, the salt thus produced would require to carry it one hundred times the number of ocean-going vessels now afloat. The Gulf Stream water is of high temperature, great clearness and a deep blue color; and when it meets the greener waters of the Atlantic to the northward, the line of distinction is often very well defined. At the exit to the Atlantic below Jupiter Inlet the stream is forty-eight miles wide to Little Bahama Bank, and its depth over four hundred fathoms.

There are numerous harbors of refuge among the Florida Keys, and that at Key

West is the best. This is a coral island seven miles long and one to two miles broad, but nowhere elevated more than eleven feet above the sea. Its name, by a free translation, comes from the original Spanish name of *Cayo Hueso*, or the Bone Island, given because the early mariners found human bones upon it. Here are twenty thousand people, mostly Cubans and settlers from the Bahamas, the chief industry being cigar-making, while catching fish and turtles and gathering sponges also give much employment. There are no springs on the island, and the inhabitants are dependent on rain or distillation for water. The air is pure and the climate healthy, the trees and shrubbery, with the residences embowered in perennial flowers, giving the city a picturesque appearance. Key West has a good harbor, and as it commands the gateway to and from the Gulf near the western extremity of the Florida coral reef, it is strongly defended, the prominent work being Fort Taylor, constructed on an artificial island within the main harbor entrance. The little Sand Key, seven miles to the southwest, is the southernmost point of the United States. Forty miles to the westward is the group of ten small, low and barren islands known as the Dry Tortugas, from the Spanish *tortuga*, a tortoise. Upon the farthest one, Loggerhead Key, stands the great guiding light for the Florida Reef, of which this is the western extremity, the tower rising one hundred and fifty feet. Fort Jefferson is on Garden Key, where there is a harbor, and in it were confined various political prisoners during the Civil War, among them some who were concerned in the conspiracy to assassinate President Lincoln.

Here, with the encircling waters of the Gulf all around us, terminates this visit to the Sunny South. As we have progressed, the gradual blending of the temperate into the torrid zone, with the changing vegetation, has reminded of Bayard Taylor's words:

There, in the wondering airs of the Tropics,
Shivers the Aspen, still dreaming of cold:
There stretches the Oak from the loftiest ledges,
His arms to the far-away lands of his brothers,
And the Pine tree looks down on his rival, the Palm."

And as the journey down the Florida Peninsula has displayed some of the most magnificent winter resorts of the American Riviera, with their wealth of tropical foliage, fruits and flowers, and their seductive and balmy climate, this too has reminded of Cardinal Damiani's glimpse of the "Joys of Heaven":

Stormy winter, burning summer, rage within these regions never,

But perpetual bloom of roses and unfading spring forever;
Lilies gleam, the crocus glows, and dropping balms their scents deliver."

Along this famous peninsula the sea rolls with ceaseless beat upon some of the most gorgeous beaches of the American coast. To the glories of tropical vegetation and the charms of the climate, Florida thus adds the magnificence of its unrivalled marine environment. Everywhere upon these pleasant coasts—

"The bridegroom, Sea,
Is toying with his wedded bride,—the Shore.
He decorates her shining brow with shells,
And then retires to see how fine she looks,
Then, proud, runs up to kiss her."

TRAVERSING THE PRAIRIE LAND.

VI.

TRAVERSING THE PRAIRIE LAND.

The Northwest Territory—Beaver River—Fort McIntosh—Mahoning Valley—Steubenville—Youngstown—Canton—Massillon—Columbus—Scioto River—Wayne Defeats the Miamis—Sandusky River—Findlay—Natural Gas Fields—Fort Wayne—Maumee River—The Little Turtle—Old Tippecanoe—Tecumseh—Battle of Tippecanoe—Harrison Defeats the Prophet—Tecumseh Slain in Canada—Indianapolis—Wabash River—Terre Haute—Illinois River—Springfield—Lincoln's Home and Tomb—Peoria—The Great West—Lake Erie—Tribe of the Cat—Conneaut—The Western Reserve—Ashtabula—Mentor—Cleveland—Cuyahoga River—Moses Cleaveland—Euclid Avenue—Oberlin—Elyria—The Fire Lands—Sandusky—Put-in-Bay Island—Perry's Victory—Maumee River—Toledo—South Bend—Chicago—The Pottawatomies—Fort Dearborn—Chicago Fire—Lake Michigan—Chicago River—Drainage Canal—Lockport—Water Supply—Fine Buildings, Streets and Parks—University of Chicago—Libraries—Federal Steel Company—Great Business Establishments—Union Stock Yards—The Hog—The Board of Trade—Speculative Activity—George M. Pullman—The Sleeping Car—The Pioneer—Town of Pullman—Agricultural Wealth of the Prairies—The Corn Crop—Whittier's Corn Song.

THE NORTHWEST TERRITORY.

Beyond the Allegheny ranges, which are gradually broken down into their lower foothills, and then to an almost monotonous level, the expansive prairie lands stretch towards the setting sun. From their prolific agriculture has come much of the wealth and prosperity of the United States. The rivers flowing out of the mountains seek the Mississippi Valley, thus reaching the sea through the Great Father of Waters. Among these rivers is the Ohio, and at its confluence with the Beaver, near the western border of Pennsylvania, was, in the early days, the Revolutionary outpost of Fort McIntosh, a defensive work against the Indians. All about is a region of coal and gas, extending across the boundary into the Mahoning district of Ohio, the Mahoning River being an affluent of the Beaver. Numerous railroads serve its many towns of furnaces and forges. To the southward is Steubenville on the Ohio, and to the northward Youngstown on the Mahoning, both busy manufacturing centres. Salem and Alliance are also

prominent, and some distance northwest is Canton, a city of thirty thousand people, in a fertile grain district, the home of President William McKinley. Massillon, upon the pleasant Tuscarawas River, in one of the most productive Ohio coal-fields, preserves the memory of the noted French missionary priest, Jean Baptiste Massillon, for all this region was first traversed, and opened to civilization, by the French religious explorers from Canada who went out to convert the Indians.

In the centre of the State of Ohio is the capital, Columbus, built on the banks of the Scioto River, a tributary of the Ohio flowing southward and two hundred miles long. This river receives the Olentangy or Whetstone River at Columbus, in a region of great fertility, which is in fact the characteristic of the whole Scioto Valley. The Ohio capital, which has a population of one hundred and twenty thousand, large commerce and many important manufacturing establishments, dates from 1812, and became the seat of the State Government in 1816. The large expenditures of public money upon numerous public institutions, all having fine buildings, the wide, tree-shaded streets, and the many attractive residences, have made it one of the finest cities in the United States. Broad Street, one hundred and twenty feet wide, beautifully shaded with maples and elms, extends for seven miles. The Capitol occupies a large park surrounded with elms, and is an impressive Doric building of gray limestone, three hundred and four feet long and one hundred and eighty-four feet wide, the rotunda being one hundred and fifty-seven feet high. There are fine parks on the north, south and east of the city, the latter containing the spacious grounds of the Agricultural Society. Almost all the Ohio State buildings, devoted to its benevolence, justice or business, have been concentrated in Columbus, adding to its attractions, and it is also the seat of the Ohio State University with one thousand students. Railroads radiate in all directions, adding to its commercial importance.

In going westward, the region we are traversing beyond the Pennsylvania boundary gradually changes from coal and iron to a rich agricultural section. As we move away from the influence of the Allegheny ranges, the hills become gentler, and the rolling surface is more and more subdued, until it is smoothed out into an almost level prairie, heavily timbered where not yet cleared for cultivation. This was the Northwest Territory, first explored by the French, who were led by the Sieur de la Salle in his original discoveries in the seventeenth century. The French held it until the conquest of Canada, when that Dominion and the whole country west to the Mississippi River came under the British flag by the treaty of 1763. After the Revolution, the various older Atlantic seaboard

States claiming the region, ceded sovereignty to the United States Government, and then its history was chequered by Indian wars until General Wayne conducted an expedition against the Miamis and defeated them in 1794, after which the Northwest Territory was organized, and the State of Ohio taken out of it and admitted to the Union in 1803, its first capital being Chillicothe. It was removed to Zanesville for a couple of years, but finally located at Columbus.

Beyond the Scioto the watershed is crossed, by which the waters of the Ohio are left behind and the valley of Sandusky River is reached, a tributary of Lake Erie. Here is Bucyrus, in another prolific natural gas region, the centre of which is Findlay. At this town, in 1887, the inhabitants, who had then had just one year of natural gas development, spent three days in exuberant festivity, to show their appreciation of the wonderful discovery. They had thirty-one gas wells pouring out ninety millions of cubic feet in a day, all piped into town and feeding thirty thousand glaring natural gas torches of enormous power, which blew their roaring flames as an accompaniment to the oratory of John Sherman and Joseph B. Foraker, who were then respectively Senator and Governor of Ohio. The soldiers and firemen paraded, and a multitude of brass bands tried to drown the Niagara of gas which was heard roaring five miles away, while the country at night was illuminated for twenty miles around. But the wells have since diminished their flow, although the gas still exists; while another field with a prolific yield is in Fairfield County, a short distance southeast of Columbus. Over the State boundary in Indiana is yet another great gas-field covering five thousand square miles in a dozen counties, with probably two thousand wells and a yield which has reached three thousand millions of cubic feet in a day. This gas supplies many cities and towns, including Chicago, and it is one of the greatest gas-fields known. In the same region there are also large petroleum deposits.

Not far beyond the State boundary is Fort Wayne, the leading city of Northern Indiana, having forty thousand population, an important railway centre, and prominent also in manufactures. It stands in a fertile agricultural district, and being located at the highest part of the gentle elevation, beyond the Sandusky Valley, diverting the waters east and west, it is appropriately called the "Summit City." Here the Maumee River is formed by the confluence of the two streams St. Joseph and St. Mary, and flows through the prairie towards the northeast, to make the head of Lake Erie. The French, under La Salle, in the eighteenth century established a fur-trading post here, and erected Fort Miami, and in 1760 the British penetrated to this then remote region and also built a fort. During the

Revolution this country was abandoned to the Indians, but when General Wayne defeated the Miamis in 1794 he thought the place would make a good frontier outpost to hold the savages in check, and he then constructed a strong work, to which he gave the name of Fort Wayne. Around this post the town afterwards grew, being greatly prospered by the Wabash and Erie Canal, and by the various railways subsequently constructed in all directions. All this prairie region was the hunting-ground of the Miamis, whose domain extended westward to Lake Michigan, and southward along the valley of the Miami River to the Ohio. They were a warlike and powerful tribe, and their adherence to the English during the Revolution provoked almost constant hostilities with the settlers who afterwards came across the mountains to colonize the Northwest Territory. Under the leadership of their renowned chief Mishekonequah, or the "Little Turtle," they defeated repeated expeditions sent against them, until finally beaten by Wayne. Subsequently they dwindled in importance, and when removed farther west, about 1848, they numbered barely two hundred and fifty persons.

OLD TIPPECANOE.

Some distance westward is the Tippecanoe River, a stream flowing southwest into the Wabash, and thence into the Ohio. The word Tippecanoe is said to mean "the great clearing," and on this river was fought the noted battle by "Old Tippecanoe," General William Henry Harrison, against the combined forces of the Shawnees, Miamis and several other tribes, which resulted in their complete defeat. They were united under Elskwatawa, or the "Prophet," the brother of the famous Tecumseh. These two chieftains were Shawnees, and they preached a crusade by which they gathered all the northwestern tribes in a concerted movement to resist the steady encroachments of the whites. The brother, who was a "medicine man," in 1805 set up as an inspired prophet, denouncing the use of liquors, and of all food, manners and customs introduced by the hated "palefaces," and confidently predicted they would ultimately be driven from the land. For years both chiefs travelled over the country stirring up the Indians. General Harrison, who was the Governor of the Northwest Territory, gathered his forces together and advanced up the Wabash against the Prophet's town of Tippecanoe, when the Indians, hoping to surprise him, suddenly attacked his camp, but he being prepared, they were signally defeated, thus giving Harrison his popular title of "Old Tippecanoe," which had much to do with electing him President in 1840. Some time after this defeat the War of 1812 broke out, when Tecumseh espoused the English cause, went to Canada with his warriors, and

was made a brigadier-general. He was killed there in the battle of the Thames, in Ontario Province, and it is said had a premonition of death, for, laying aside his general's uniform, he put on a hunting-dress and fought desperately until he was slain. Tecumseh was the most famous Indian chief of his time, and the honor of killing him was claimed by several who fought in the battle, so that the problem of "Who killed Tecumseh?" was long discussed throughout the country.

The State of Indiana was admitted into the Union in 1816, and in its centre, built upon a broad plain, on the east branch of White River, is its capital and largest city, Indianapolis, having two hundred thousand population. This is a great railway centre, having lines radiating in all directions, and it also has extensive manufactures and a large trade in live stock. The city plan, with wide streets crossing at right angles, and four diagonal avenues radiating from a circular central square, makes it very attractive; and the residential quarter, displaying tasteful houses, ornate grounds and shady streets, is regarded as one of the most beautiful in the country. The State Capitol, in a spacious park, is a Doric building with colonnade, central tower and dome, and in an enclosure on its eastern front is erected one of the finest Soldiers' and Sailors' Monuments existing, rising two hundred and eighty-five feet, out-topping everything around, having been designed and largely constructed in Europe. There are also many prominent public buildings throughout the city. Indianapolis, first settled in 1819, had but a small population until the railways centred there, the Capitol being removed from Corydon in 1825. The Wabash River, to which reference has been made, receives White River, and is one of the largest affluents of the Ohio, about five hundred and fifty miles long, being navigable over half that length. It rises in the State of Ohio, flows across Indiana, and, turning southward, makes for a long distance the Illinois boundary. Its chief city is Terre Haute, the "High Ground," about seventy miles west of Indianapolis, another prominent railroad centre, having forty-five thousand people, with extensive manufactures. It is surrounded by valuable coal-fields, is built upon an elevated plateau, and, like all these prairie cities, is noted for its many broad and well-shaded streets. It was founded in 1816.

THE GREAT WEST.

Progressing westward, the timbered prairie gradually changes to the grass-covered prairie, spreading everywhere a great ocean of fertility. Across the Wabash is the "Prairie State" of Illinois, its name coming from its principal river, which the Indians named after themselves. The word is a French adaptation of

the Indian name "Illini," meaning "the superior men," the earliest explorers and settlers having been French, the first comers on the Illinois River being Father Marquette and La Salle. At the beginning of the eighteenth century their little settlements were flourishing, and the most glowing accounts were sent home, describing the region, which they called "New France," on account of its beauty, attractiveness and prodigious fertility, as a new Paradise. There were many years of Indian conflicts and hostility, but after peace was restored and a stable government established, population flowed in, and Illinois was admitted as a State to the Union in 1818. The capital was established at Springfield in 1837, an attractive city of about thirty thousand inhabitants, built on a prairie a few miles south of Sangamon River, a tributary of the Illinois, and from its floral development and the adornment of its gardens and shade trees, Springfield is popularly known as the "Flower City." There is a magnificent State Capitol with high surmounting dome, patterned somewhat after the Federal Capitol at Washington. Springfield has coal-mines which add to its prosperity, but its great fame is connected with Abraham Lincoln. He lived in Springfield, and the house he occupied when elected President has been acquired by the State and is on public exhibition. After his assassination in 1865, his remains were brought from Washington to Springfield, and interred in the picturesque Oak Ridge Cemetery, in the northern suburbs, where a magnificent monument was erected to his memory and dedicated in 1874. About sixty miles north of Springfield, the Illinois River expands into Peoria Lake, and here came La Salle down the river in 1680, and at the foot of the lake established a trading-post and fort, one of the earliest in that region. When more than a century had elapsed, a little town grew there which is now the busy industrial city of Peoria, famous for its whiskey and glucose, and turning out products that annually approximate a hundred millions, furnishing vast traffic for numerous railroads. It is the chief city of the "corn belt," and is served by all the prominent trunk railway lines.

Like the pioneers of a hundred years ago, we have left the Atlantic seaboard, crossed the Allegheny Mountains and entered the expansive "Northwest Territory," which in the first half of the nineteenth century was the Mecca of the colonist and frontiersman. This was then the region of the "Great West," though that has since moved far beyond the Mississippi. Its agricultural wealth made the prosperity of the country for many decades, and its prodigious development was hardly realized until put to the test of the Civil War, when it poured out the men and officers, and had the staying qualities so largely contributing to the result of that great conflict. Gradually overspread by a network of railways, the numerous "cross-roads" have expanded everywhere into towns and cities, almost all

patterned alike, and all of them centres of rich farming districts. Coal, oil and gas have come to minister to its manufacturing wants, and thus growing into mature Commonwealths, this prolific region in the later decades has been itself, in turn, contributing largely to the tide of migration flowing to the present "Great Northwest," a thousand miles or more beyond. It presents a rich agricultural picture, but little scenic attractiveness. Everywhere an almost dead level, the numerous railways cross and recross the surface in all directions at grade, and are easily built, it being only necessary to dig a shallow ditch on either side, throw the earth in the centre, and lay the ties and rails. Nature has made the prairie as smooth as a lake, so that hardly any grading is necessary, and the region of expansive green viewed out of the car window has been aptly described as having "a face but no features," when one looks afar over an ocean of waving verdure.

LAKE ERIE.

This vast prairie extends northward to and beyond the Great Lakes, and it is recorded that in the early history of the proposed legislation for the "Northwest Territory," Congress gravely selected as the names of the States which were to be created out of it such ponderous conglomerates as "Metropotamia," "Assenisipia," "Pelisipia" and "Polypotamia," titles which happily were long ago permitted to pass into oblivion. Northward, in Ohio, the region stretches to Lake Erie, the most southern and the smallest of the group of Great Lakes above Niagara. It is regarded as the least attractive lake, having neither romances nor much scenery. Yet, from its favorable position, it carries an enormous commerce. It is elliptical in form, about two hundred and forty miles long and sixty miles broad, the surface being five hundred and sixty-five feet above the ocean level. It is a very shallow lake, the depth rarely exceeding one hundred and twenty feet, excepting at the lower end, while the other lakes are much deeper, and in describing this difference of level it is said that the surplus waters poured from the vast *basins* of Superior, Michigan and Huron, flow across the *plate* of Erie into the deep *bowl* of Ontario. This shallowness causes it to be easily disturbed, so that it is the most dangerous of these fresh-water seas, and it has few harbors, and those very poor, especially upon the southern shore. The bottom of the lake is a light, clayey sediment, rapidly accumulated from the wearing away of the shores, largely composed of clay strata. The loosely-aggregated products of these disintegrated strata are frequently seen along its coast, forming cliffs extending back into elevated plateaus, through which the rivers cut deep

channels. Their mouths are clogged by sand-bars, and dredging and breakwaters have made the harbors on the southern shore, around which have grown the chief towns—Dunkirk, Erie, Ashtabula, Cleveland, Sandusky and Toledo. The name of Lake Erie comes from the Indian "tribe of the Cat," whom the French called the "Chats," because their early explorers, penetrating to the shores of the lake, found them abounding in wild cats, and thus they gave the same name to the cats and the savages. In their own parlance, these Indians were the "Eries," and in the seventeenth century they numbered about two thousand warriors. In 1656 the Iroquois attacked and almost annihilated them.

The Lake Erie ports in the "Buckeye State" of Ohio, so called from the buckeye tree, are chiefly harbors for shipping coal and receiving ores from the upper lakes, their railroads leading to the great industrial centres to the southward. Near the eastern boundary of Ohio is Conneaut, on the bank of a wide and deep ravine, formed by a small river, broadening into a bay at the shore of the lake, the name meaning "many fish." Here landed in 1796 the first settlers from Connecticut, who entered the "Western Reserve," as all this region was then called. On July 4th of that year, celebrating the national anniversary, "they pledged each other in tin cups of lake water, accompanied by a salute of fowling-pieces," and the next day began building the first house on the Reserve, constructed of logs, and long known as "Stow Castle." Conneaut is consequently known as the "Plymouth of the Western Reserve," as here began the settlements made by the Puritan New England migration to Ohio. On deep ravines making their harbors are Ashtabula, an enormous *entrepôt* for ores, and a few miles farther westward, Painesville, on Grand River, named for Thomas Paine. Beyond is Mentor, the home of the martyred President Garfield, whose large white house stands near the railway. All along here, the southern shore of Lake Erie is a broad terrace at eighty to one hundred feet elevation above the water, while farther inland is another and considerably higher plateau. Each sharp declivity facing northward seems at one time to have been the actual shore of the lake when its surface before the waters receded was much higher than now. The outer plateau having once been the overflowed lake bed, is level, excepting where the crooked but attractive streams have deeply cut their winding ravines down through it to reach Lake Erie.

THE CITY OF CLEVELAND.

Thus we come to Cleveland, the second city in Ohio, having four hundred thousand people, and extensive manufacturing industries. It is the capital of the

"Western Reserve" and the chief city of Northern Ohio, its commanding position upon a high bluff, falling off precipitously to the edge of the water, giving it the most attractive situation on the shore of Lake Erie. Shade trees embower it, including many elms planted by the early settlers, who learned to love them in New England, and hence it delights in the popular title of the "Forest City." Were not the streets so wide, the profusion of foliage might make Cleveland seem like a town in the woods. The little Cuyahoga River, its name meaning "the crooked stream," flows with wayward course down a deeply washed and winding ravine, making a valley in the centre of the city, known as "the Flats," and this, with the tributary ravines of some smaller streams, is packed with factories and foundries, oil refineries and lumber mills, their chimneys keeping the business section constantly under a cloud of smoke. Railways run in all directions over these flats and through the ravines, while, high above, the city has built a stone viaduct nearly a half-mile long, crossing the valley. Here are the great works of the Standard Oil Company, controlling that trade, and several of the petroleum magnates have their palaces in the city.

Old Moses Cleaveland, a shrewd but unsatisfied Puritan of the town of Windham, Connecticut, became the agent of the Connecticut Lead Company, who brought out the first colony in 1796 that landed at Conneaut. They explored the lake shore, and selecting as a good location the mouth of Cuyahoga River, Moses wrote back to his former home that they had found a spot "on the bank of Lake Erie which was called by my name, and I believe the child is now born that may live to see that place as large as old Windham." In little over a century the town has grown far beyond his wildest dreams, although it did not begin to expand until the era of canals and railways, and it was not so long ago that the people in grateful memory erected a bronze statue of the founder. One of the local antiquaries, delving into the records, has found why various original settlers made their homes at Cleveland. He learned that "one man, on his way farther West, was laid up with the ague and had to stop; another ran out of money and could get no farther; another had been to St. Louis and wanted to get back home, but saw a chance to make money in ferrying people across the river; another had \$200 over, and started a bank; while yet another thought he could make a living by manufacturing ox-yokes, and he stayed." This earnest investigator continues: "A man with an agricultural eye would look at the soil and kick his toe into it, and then would shake his head and declare that it would not grow white beans—but he knew not what this soil would bring forth; his hope and trust was in beans, he wanted to know them more, and wanted potatoes, corn, oats and cabbage, and he knew not the future of Euclid Avenue."

On either side of the deep valley of "the Flats" stretch upon the plateau the long avenues of Cleveland, with miles of pleasant residences, surrounded by lawns and gardens, each house isolated in green, and the whole appearing like a vast rural village more than a city. This pleasant plan of construction had its origin in the New England ideas of the people. Yet the city also has a numerous population of Germans, and it is recorded that one of the early landowners wrote, in explaining his project of settlement: "If I make the contract for thirty thousand acres, I expect with all speed to send you fifteen or twenty families of prancing Dutchmen." These Teutons came and multiplied, for the original Puritan stock can hardly be responsible for the vineyards of the neighborhood, the music and dancing, and the public gardens along the pleasant lake shore, where the crowds go, when work is over, to enjoy recreation and watch the gorgeous summer sunsets across the bosom of the lake which are the glory of Cleveland. Upon the plateau, the centre of the city, is the Monumental Park, where stand the statue of Moses Cleaveland, the founder, who died in 1806, and a fine Soldiers' Monument, with also a statue of Commodore Perry. This Park is an attractive enclosure of about ten acres, having fountains, gardens, monuments and a little lake, and it is intersected at right angles by two broad streets, and surrounded by important buildings. One of the streets is the chief business highway, Superior Street, and the other leads down to the edge of the bluff on the lake shore, where the steep slope is made into a pleasure-ground, with more flower-beds and fountains and a pleasant outlook over the water, although at its immediate base is a labyrinth of railroads and an ample supply of smoke from the numerous locomotives. A long breakwater protects the harbor entrance, and out under the lake is bored the water-works tunnel.

There extends far to the eastward, from a corner of the Monumental Park, Cleveland's famous street—Euclid Avenue. The people regard it as the handsomest highway in America, in the combined magnificence of houses and grounds. It is a level avenue of about one hundred and fifty feet width, with a central roadway and stone footwalks on either hand, shaded by rows of grand overarching elms, and bordered on both sides by well-kept lawns. This is the public highway, every part being kept scrupulously neat, while a light railing marks the boundary between the street and the private grounds. For a long distance this noble avenue is bordered by stately residences, each surrounded by ample gardens, the stretch of grass, flowers and foliage extending back from one hundred to four hundred feet between the street and the buildings. Embowered in trees, and with all the delights of garden and lawn seen in every direction, this grand avenue makes a delightful driveway and promenade. Upon it live the

multi-millionaires of Cleveland, the finest residences being upon the northern side, where they have invested part of the profits of their railways, mills, mines, oil wells and refineries in adorning their homes and ornamenting their city. This splendid boulevard, in one way, is a reproduction of the Parisian Avenue of the Champs Elysées and its gardens, but with more attractions in the surroundings of its bordering rows of palaces. Here live the men who vie with those of Chicago in controlling the commerce of the lakes and the affairs of the Northwest. Plenty of room and an abundance of income are necessary to provide each man, in the heart of the city, with two to ten acres of lawns and gardens around his house, but it is done here with eminent success. About four miles out is the beautiful Wade Park, opposite which are the handsome buildings of the Western Reserve University, having, with its adjunct institutions, a thousand students. Beyond this, the avenue ends at the attractive Lake View Cemetery, where, on the highest part of the elevated plateau, with a grand outlook over Lake Erie, is the grave of the assassinated President Garfield. His imposing memorial rises to a height of one hundred and sixty-five feet.

CLEVELAND TO CHICAGO.

Thirty-five miles southwest of Cleveland, and some distance inland from Lake Erie, is Oberlin, where, in a fertile and prosperous district, is the leading educational foundation of Northern Ohio—Oberlin College—named in memory of the noted French philanthropist, and established in 1833 by the descendants of the Puritan colonists, to carry out their idea of thorough equality in education. It admits students without distinction of sex or color, and has about thirteen hundred, almost equally divided between the sexes, occupying a cluster of commodious buildings. To the westward is the beautiful ravine of Black River, which gets out to the lake by falling over a rocky ledge in two streams, and on the peninsula formed by its forks is the town of Elyria. Maria Ely was the wife of the founder of the settlement, who named it after her in this peculiar reversible way. This romantic stream bounds the "Fire Lands" of the Western Reserve, a tract of nearly eight hundred square miles abutting on the lake shore, which Connecticut set apart for colonization by her people, who had been sufferers from destructive fires in the towns of New London, Fairfield and Norwalk on Long Island Sound. They secured this wilderness in the early part of the nineteenth century, and their chief town is Sandusky, with twenty-five thousand population. Here lived most of the Eries, the Indian "tribe of the Cat," who fished in Sandusky Bay, its upper waters being an archipelago of little green

islands abounding with water fowl. They were known to the adjoining tribes as the "Neutral Nation," for they maintained two villages of refuge on Sandusky River, between the warlike Indians of the east and the west, and whoever entered their boundaries was safe from pursuit, the sanctuary being rigidly observed. The early French missionaries who found them in the seventeenth century speak of these anomalous villages among the savages as having then been long in existence.

The name of Sandusky is a corruption of a Wyandot word meaning "cold-water pools," the French having originally rendered it as Sandosquet. The shores are low, but there is a good harbor and much trade, and here is located the Ohio State Fish Hatchery. The railroads are laid among the savannahs and lagoons, and one of the suburban stations has been not inaptly named Venice. There are extensive vineyards on the flat and sunny shores of the bay, and this is one of the most prolific grape districts in the State. Sandusky Bay is a broad sheet of water, in places six miles wide, and about twenty miles long. Sandusky has a large timber trade, being noted for the manufacture of hard woods. Out beyond the bold peninsula, protruding into the lake at the entrance to the bay, is a group of islands spreading over the southwestern waters of Lake Erie, of which Kelly's Island is the chief, an archipelago formed largely from the *detritus* washed out of the Detroit, Maumee and various other rivers flowing into the head of the lake. Here the Erie Indians had a fortified stronghold, whose outlines can still be traced. The most noted of the group is Put-in-Bay Island, now a popular watering-place, which got its name from Commodore Perry, who "put in" there with the captured British fleet at the naval battle of Lake Erie, September 10, 1813. It was from this place, just after his victory, that he sent the historic despatch, giving him fame, "We have met the enemy and they are ours." The killed of both fleets were buried side by side near the beach on the island, the place being marked by a mound. The lovely sheet of water of Put-in-Bay glistens in front, having the towns of villa-crowned Gibraltar Island upon its surface. Vineyards and roses abound, these islands, like the adjacent shores, being noted for their wines.

The Maumee River, coming up from Fort Wayne, flows into the head of Lake Erie, the largest stream on its southern coast. It comes from the southwest through the region of the "Black Swamp," a vast district, originally morass and forest, which has been drained to make a most fertile country. This "miserable bog," as the original settlers denounced it, when they were jolted over the rude corduroy roads that sustained them upon the quaking morass, has since become

the "prolific garden" and "magnificent forest" described by the modern tourist. The Maumee Valley was an almost continual battle-ground with the Indians when "Mad Anthony Wayne" commanded on that frontier, he being called by them the "Wind," because "he drives and tears everything before him." For a quarter of a century border warfare raged along this river, then known as the "Miami of the Lakes," and its chief settlement, Toledo, passed its infancy in a baptism of blood and fire. It was at the battle of Fallen Timbers, fought in 1794, almost on the site of Toledo, that Wayne gave his laconic and noted "field orders." General William Henry Harrison, then his aide, told Wayne just before the battle he was afraid he would get into the fight and forget to give "the necessary field orders." Wayne replied: "Perhaps I may, and if I do, recollect that the standing order for the day is, charge the rascals with the bayonets." Toledo is built on the flat surface on both sides of the Maumee River and Bay, which make it a good harbor, stretching six miles down to Lake Erie. There are a hundred thousand population here, and this energetic reproduction of the ancient Spanish city has named its chief newspaper the *Toledo Blade*. The city has extensive railway connections and a large trade in lumber and grain, coal and ores, and does much manufacturing, it being well served with natural gas. A dozen grain elevators line the river banks, and the factory smokes overhang the broad low-lying city like a pall. To the westward, crossing the rich lands of the reclaimed swamp, is the Indiana boundary, that State being here a broad and level prairie, which also stretches northward into Michigan. The chief town of Northern Indiana is South Bend, named from the sweeping southern bend of St. Joseph River, on which it is built. This stream rises in Michigan, and flows for two hundred and fifty miles over the prairie, going down into Indiana and then back again to empty into Lake Michigan. South Bend is noted for its carriage- and wagon-building factories, and has several flourishing Roman Catholic institutions, generally of French origin. To the westward spreads the level prairie, with scant scenic attractions, though rich in agriculture, to the shores of Lake Michigan, being gridironed with railways as Chicago is approached.

THE GREAT CITY OF THE LAKES.

The second city in the United States, with a population approximating two millions, Chicago, the metropolis of the prairies, seems destined for unlimited growth. It has absorbed all the outlying towns, and now embraces nearly two hundred square miles. It has a water-front on Lake Michigan of twenty-six miles, and its trade constantly grows. It pushes ahead with boundless energy, attracting

the shrewdest men of the West to take part in its vast and profitable enterprises, and is in such a complete manner the depot and storehouse for the products and supplies of goods for the enormous prairie region around it, and for the entire Northwest, and the country out to the Rocky Mountains and Pacific Ocean, that other Western cities cannot displace or even hope to rival it. Yet it is a youthful giant, of quick and marvellous development, but few of its leading spirits having been born within its limits, nearly all being attracted thither by its paramount advantages. The prominent characteristics of Chicago are an overhanging pall of smoke; streets crowded with quick-moving, busy people; a vast aggregation of railways, vessels, elevators and traffic of all kinds; a polyglot population drawn from almost all races; and an earnest devotion to the almighty dollar. Its name came from the river, and is of Indian origin, regarded as probably a corruption of "Cheecagua," the title of a dynasty of chiefs who controlled the country west and south of Lake Michigan. This also was a word applied in the Indian dialect to the wild onion growing luxuriantly on the banks of the river, and they gave a similar name to the thunder which they believed the voice of the Great Spirit, and to the odorous animal abounding in the neighborhood that the white man knew as the "polecat." These were rather incongruous uses for the same word, but the suggestion has been made that all can be harmonized if Chicago is interpreted as meaning "strong," the Indians, being poorly supplied with words, usually selecting the most prominent attribute in giving names. All these things are in one way or another "strong," and it is evident that prodigious strength exists in Chicago.

As elsewhere throughout the Northwest, the French missionaries were here the earliest explorers, Father Marquette coming in 1673, and afterwards Hennepin, Joliet and La Salle, whose names are so numerous reproduced in the Northwestern States. The French built at the mouth of the river Fort Chicagou, for a trading-post, and held it until the English conquered Canada. When the earlier American settlers ventured to this frontier, the Indians on Lake Michigan were the Pottawatomies, and were hostile. The Government in 1804 built Fort Dearborn, near the mouth of the Chicago River, to control them. These Indians joined in the crusade of the Prophet and Tecumseh, and when the war with England began in 1812, attacked and captured the fort, massacring the garrison. The post was subsequently re-established, and the Indians were ultimately removed west of the Mississippi. Not long afterwards it was said the first purchase of the site of Chicago took place, wherein a large part of the land now occupied was sold for a pair of boots. When the town plot was originally surveyed, twelve families were there in addition to the garrison of Fort

Dearborn, and in 1831 it had one hundred people. In 1833 the town government was organized, and it had five hundred and fifty inhabitants and one hundred and seventy-five buildings. Five trustees then ruled Chicago, and collected \$49 for the first year's taxes. Collis P. Huntington, the Pacific Railway manager, says that in 1835, being possessed of a good constitution and a pair of mules, but little else, he was out that way prospecting, and found at Chicago nothing but a swamp and a few destitute farmers, all anxious to move. One of these farmers came to him with the deed of his farm of two thousand acres, and offered to trade it for his pair of mules. Huntington adds: "I was not very favorably impressed with the settlement and declined his offer, and finally continued my travel west, and that farm is to-day the business centre of Chicago."

In 1837 Chicago got its first city charter, and it then had about forty-two hundred people. The rapid growth since has been unparalleled, especially when, after 1850, its commercial enterprise began attracting wide attention, the population then being about thirty thousand. In 1855, to get above the swamp and improve the drainage, the level of the entire city was raised seven feet, huge buildings being elevated bodily while business was progressing, an enterprise mainly accomplished by the ingenious devices which first gave prominence to the late George M. Pullman. The population almost quadrupled and its trade increased tenfold in the decade 1850-60, and in 1870 the population was over three hundred thousand, and it had become a leading American city. Yet Chicago has had terrible setbacks in its wonderful career, the most awful being the fire in October, 1871, the greatest of modern times, which raged for three days, burned over a surface of nearly four square miles and until practically nothing remained in the district to devour, destroyed eighteen thousand buildings, two hundred lives, and property valued at \$200,000,000, leaving a hundred thousand people homeless—a calamity that excited the sympathies of the world, which gave relief contributions aggregating \$7,000,000. Yet while the embers were smoking, this enterprising people set to work to rebuild their city with a will and a progress which caused almost as much amazement as the original catastrophe. The recovery was complete; the city which had been of wood was rebuilt of brick and stone and iron and steel, and its progress since has developed an energy not before equalled. It has been beautified by grand parks and boulevards, and by the construction of palatial residences and business blocks, and of enormous office buildings, the tall "sky-scrapers" having been first invented and built in Chicago. In 1893 the World's Columbian Exhibition, to celebrate the discovery of America, was held at Chicago on a vast scale and with remarkable success. The city has long been, also, a favorite meeting-place for

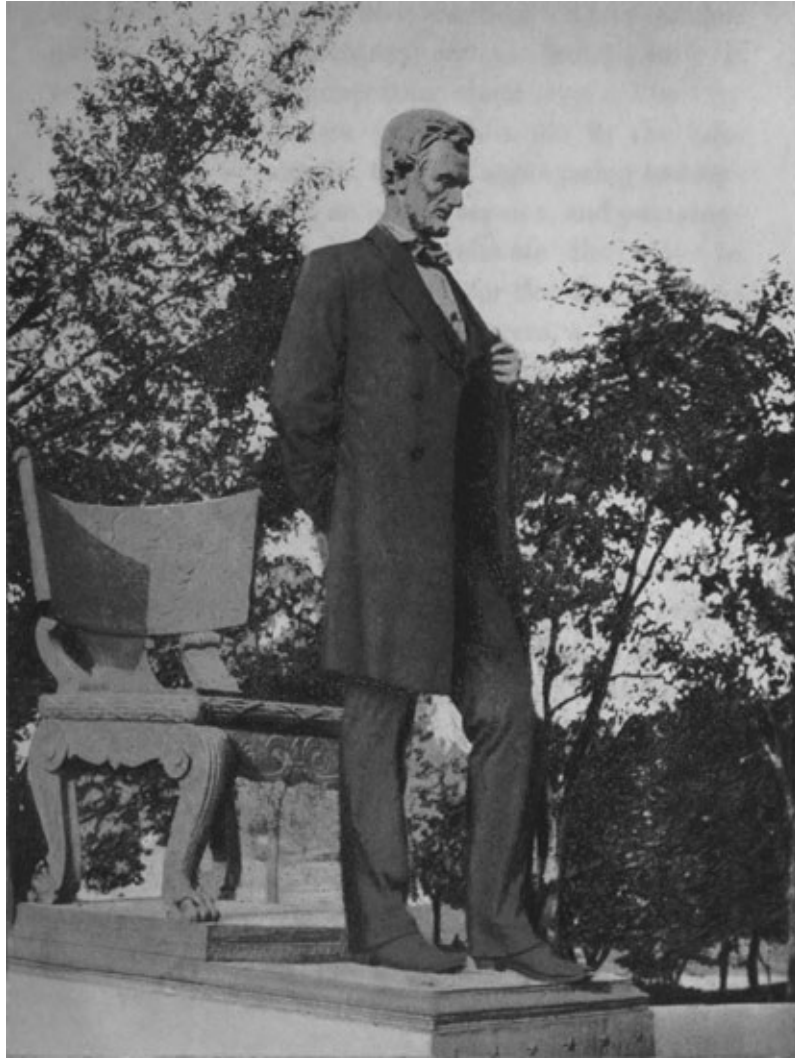
the great political Conventions nominating candidates for President and Vice-President of the United States, its large hotel capacity and immense halls giving advantages for these enormous assemblages.

CHICAGO'S ADMIRABLE LOCATION.

The position of Chicago at the southwestern extremity of Lake Michigan, with prairies of the greatest fertility stretching hundreds of miles south and west, makes the city the primary food-gatherer and supply-distributor of the great Northwest, and this has been the chief cause of its growth. In September, 1833, the Pottawatomies agreed to sell their prairie homes to the United States and migrate to reservations farther West, and seven thousand of them assembled in grand council at Chicago, and sold the Government twenty millions of acres of these prairies around Lake Michigan, in Indiana, Illinois and Michigan, for \$1,100,000. Thus was this fertile domain opened to settlement. In the Indian dialect, Michigan means the "great water," and it is the largest lake within the United States, being three hundred and twenty miles long and seventy broad, and having an average depth of one thousand feet, with the surface elevated five hundred and seventy-eight feet above the ocean level. On the Chicago side this extensive lake has but a narrow watershed, the Illinois River, draining the region to the westward, being formed only sixty-five miles southwest of the lake by the junction of the Kankakee and Desplaines Rivers. This narrow and very low watershed, considered in connection with the enormous capacity of the Illinois River valley, which is at a much lower level and appears as if worn by a mighty current in former times, is regarded by geologists as an evidence of the probability that the Lake Michigan waters may in past ages have found their way to that outlet and flowed through the Illinois and Mississippi Rivers to the Gulf. The diminutive bayou of the Chicago River, with its two short and tortuous branches, made Chicago the leading lake port, and thus brought trade, so that early in the race it far outstripped all its Western rivals. Every railroad of prominence sought an outlet or a feeder at Chicago, and the title of a "trunk line" was adopted for a line of rails between Chicago and the seaboard. The surrounding prairie for miles is crossed in all directions by railways, and a large part of the city and suburbs is made up of huge stations, car-yards, elevators, storehouses and cattle-pens, almost overwhelming visitors with the prodigious scale of their elaborate perplexity. The maze of railways and streets on the level surface, all crossing at grade, as it has spread over miles of prairie and grown into such enormous proportions, presents a most serious problem, with which the

city and the railways are now dealing on a comprehensive plan, by which it is hoped that before long the grade-crossings will be eliminated.

Another problem, found even more serious as the city grew, was the drainage. In former years the sewage was discharged into the Chicago River and Lake Michigan. The river became a most malodorous stream in consequence, and as it had practically no descent, the current would scarcely flow, and the lake, from which the city water-supply was drawn, was more and more polluted. With the customary enterprise of these wonderful people, however, they decided to make the only change feasible, which was to take advantage of the descending watershed towards Desplaines River and change their sewerage system so that it would all discharge in that direction. The problem was solved by the construction of the most expensive drainage works in the world, and a complete change of the sewers, at a cost altogether approximating \$40,000,000. St. Louis and the towns along the Desplaines fought the scheme, and there was protracted litigation, but the very existence of Chicago depended on the result. The great drainage canal was completed connecting the Chicago River South Branch with Desplaines River at Lockport, twenty-eight miles southwest, where it discharges the outflow from Lake Michigan, which then flows past Joliet, and ultimately into Illinois River. This huge canal, opened in January, 1900, reverses the flow of the Chicago River, which now draws in about three hundred thousand cubic feet of water per minute from Lake Michigan and flushes the canal, which is also to be made available for shipping. Thus the Chicago River flows towards its source with a free current, and Lake Michigan has been purified. The canal has quite a descent to Lockport, and the water-power is to be availed of in generating electricity. The city water-supply is drawn from cribs out in the lake through four systems of tunnels, aggregating twenty-two miles, furnishing an ample service, and pumping-stations in various locations elevate the water in towers to secure sufficient head for the flow into the buildings. The chief of these towers, a solid stone structure alongside the lake, rises one hundred and sixty feet, the huge pumping-engines forcing a vast stream constantly over its top.



Lincoln Monument, Lincoln Park, Chicago

FEATURES OF CHICAGO.

Chicago is the world's greatest grain, lumber and cattle market. It attracts immigrants from everywhere, and all flourish in native luxuriance, although occasionally they are compelled to bow to the power of the law by the military arm when civil forces are exhausted. Everything seems to go on without much hindrance, and thus this wonderful city secures its rapid growth and completely cosmopolitan character. While proud of their amazing progress, the people seem generally so engrossed in pushing business enterprises and piling up fortunes that they have little time to think of much else. Yet somebody has had opportunity to plan the adornment of the city by a magnificent series of parks and boulevards encircling it. The broad expanse of prairie was low, level and

treeless originally, but abundant trees have since been planted, and art has made little lakes and miniature hills, beautiful flower-gardens and abundant shrubbery, thus producing pleasure-grounds of rare attractions. Michigan Avenue and Drexel and Grand Boulevards, leading to the southern system of parks and Lake Shore Drive on the north side of Chicago River, are the finest residential streets. The huge Auditorium fronting on Michigan Avenue was erected at a cost of \$3,500,000, includes a hotel and theatre, and is surmounted with a tower rising two hundred and seventy feet, giving a fine view over the city and lake. Out in front is the Lake Park, with railways beyond near the shore, and a fine bronze equestrian statue of General John A. Logan, who died in 1886 and is buried in the crypt beneath the monument. Michigan Avenue begins at Chicago River alongside the site of old Fort Dearborn, now obliterated, and it stretches far south, a tree-lined boulevard adorned by magnificent residences.

Chicago River, with its entrance protected by a wide-spreading breakwater, is the harbor of the city, and, like its railways, carries the trade. Tunnels conduct various streets under it, and a multitude of bridges go over it, all of them opening to let vessels pass. They are mostly swinging bridges, but some are ingenious constructions, which roll, and lift and fold, and in various curious ways open the channel for the shipping. Huge elevators line the river banks, with vessels alongside, into which streams of grain are poured, while multitudes of cars move in and out, under and around them, bringing the supply from the farm to the storage-bins. In the business section, as elsewhere, the streets are wide, thus accommodating the throngs who fill them, and there are fine city and national buildings, a new Post-office of large size and imposing architecture being in course of construction. The Chicago Public Library, completed in 1897, is a grand structure, costing \$2,000,000, and having about three hundred thousand volumes. The University of Chicago, in the southern suburbs, is destined to become one of the leading institutions of learning in America. It began instruction in 1892, and now has some twenty-four hundred students, and endowments of \$15,000,000, largely the gifts of John D. Rockefeller. The University grounds cover twenty-four acres, and when the plan is completed there will be over forty buildings. Its libraries contain three hundred and fifty thousand volumes. The great Yerkes Observatory, adjunct to this University, is at Lake Geneva, Wisconsin, seventy miles distant, and has the largest refracting telescope in the world, with forty-inch lens and a tube seventy feet long. On the northern side of the city is the Newberry Library, with \$3,000,000 endowment and two hundred thousand volumes, including admirable musical and medical collections, and the Crerar Library, with \$2,000,000 endowment, principally for

scientific works, is being established on the south side. Chicago's greatest industrial establishment is the Federal Steel Company, having enormous rolling-mills and foundries in various parts of the city, and also at Joliet on Desplaines River. Its South Chicago Rolling Mills occupy over three hundred acres. The manufacture of agricultural machinery is represented by two enormous establishments, the McCormick Harvesting Machine Company on the southwest side and the Deering Works in the northwestern district.

CHICAGO BUSINESS ENERGY.

As the elevators of Chicago represent its traffic in grain, and contain usually a large proportion of what is known as the "visible supply," so do the vast lumber-yards along Chicago River often store up an enormous product of the output from the "Great North Woods," covering much of Michigan, Wisconsin and Minnesota, and spreading across the Canadian border. The third great branch of traffic is represented by the Union Stock Yards in the southwestern suburbs. These yards in a year will handle eight millions of hogs, four millions of cattle, four millions of sheep and a hundred thousand horses, over two-thirds of the hogs and cattle being killed in the yards and sent away in the form of meat, and the whole annual traffic being valued at \$250,000,000. The yards cover three hundred acres, and with the packing-houses employ twenty-five thousand men, and they have twenty miles of water-troughs and twenty-five miles of feeding-troughs, and are served by two hundred and fifty miles of railway-tracks. The hog is a potential factor in American economy, being regarded as the most compact form in which the corn crop of the country can be transported to market. The corn on the farm is fed to the hog, and the animal is sent to Chicago as a package provided by nature for its economical utilization. The Union Stock Yards make a complete town, with its own banks, hotels, Board of Trade, Post-office, town-hall, newspaper and special Fire Department. The extensive enclosure is entered by a modest, gray sandstone turreted gateway, surmounted by a carved bull's head, emblematic of its uses. The Horse Market is a large pavilion, seating four thousand people. From this vast emporium, with its enormous packing-houses, are sent away the meat supplies that go all over the world, the product being carried out in long trains of canned goods and refrigerator cars, the most ingenious methods of "cold storage" being invented for and used in this widely extended industry.

The active traffic of the grain and provision trades of Chicago is conducted in the building of the Board of Trade, a tall and imposing structure at the head of

La Salle Street, which makes a fitting close to the view along that grand highway. It is one of the most elaborate architectural ornaments of the city, and its surmounting tower rises three hundred and twenty-two feet from the pavement. The fame of this grand speculative arena is world-wide, and the animated and at times most exciting business done within marks the nervous beating of the pulse of this metropolis of food products. The interior is a magnificent hall, lighted by high-reaching windows and surmounted by a central skylight elevated nearly a hundred feet above the floor. Impressive columns adorn the sides, and the elaborate frescoes above are in keeping with its artistic decoration. Upon the spacious floor, between nine and one o'clock, assemble the wheat and corn, and pork, lard, cattle and railway kings in a typical scene of concentrated and boiling energy feeding the furnace in which Chicago's high-pressure business enterprise glows and roars. These speculative gladiators have their respective "pits" or amphitheatres upon the floor, so that they gather in huge groups, around which hundreds run and jostle, the scene from the overlooking gallery, as the crowds sway and squirm, and with their calls and shouting make a deafening uproar, being a veritable Bedlam. Each "pit" deals in a specific article, while in another space are detachments of telegraph operators working with nimble fingers to send instant reports of the doings and prices to the anxious outer world. High up on the side of the grand hall, in full view of all, are hung large dials, whose moving hands keep momentary record of the changes in prices made by the noisy and excited throngs in the "pits," thus giving notice of the ruling figures for the next month's "options" on wheat, corn and "short-ribs." There are tables for samples, and large blackboards bearing the figures of market quotations elsewhere. This Chicago Board of Trade has been the scene of some of the wildest speculative excitements in the country, as its shouting and almost frenzied groups of traders in the "pits" may make or break a "corner," and here in fitful fever concentrates the business energy of the great Metropolis of the Lakes.

PULLMAN AND THE SLEEPING-CAR.

Another Chicago specialty of wide fame is the railway sleeping-car, brought to its present high stage of development by one of the most prominent Chicagoans, the late George M. Pullman. The earliest American sleeping-car was devised by Theodore T. Woodruff, who constructed a small working model in 1854 at Watertown, New York, and subsequently building his car, first ran it on the New York Central Railroad in October, 1856, charging fifty cents for a berth. George

M. Pullman was originally a cabinet-maker in New York State, and moved when a young man to Chicago. His first fame in that city, as already stated, came from the ingenious methods he devised, when the grade of the town was elevated to secure better drainage, for raising the buildings by putting hundreds of jackscrews under them, trade continuing uninterrupted during the process. Pullman, subsequently to that time, travelled occasionally between Chicago and Buffalo, and one night got into Woodruff's car. He was stretched out upon the vibrating couch for some two hours, but could not sleep, and his eyes being widely open, and the sight wandering all about the car, he struck upon a new idea. When he left the car he had determined to develop from his brief experience a plan destined to expand into a complete home upon wheels for the traveller, either awake or sleeping. In 1859 he turned two ordinary railway coaches into sleeping-cars and placed them upon night trains between Chicago and St. Louis, charging fifty cents per berth, his first night's receipts being two dollars. He ran these experimental coaches about five years before he felt able to carry out his ideal plan, and he then occupied fully a year in constructing his model sleeping-car, the "Pioneer," at Chicago, at a cost of \$18,000. But when completed the car was so heavy, wide and high that no railway could undertake running it, as it necessitated cutting off station platforms and elevating the tops of bridges before it could pass by. Thus he had a white elephant on his hands for a time. In April, 1865, President Lincoln's assassination shocked the country, and the funeral, with its escort of mourning statesmen, was progressing from Washington to Chicago, on the way to the grave at Springfield. The nation watched its progress, and the railways transporting the *cortége* were doing their best. The manager of the road from Chicago to Springfield used the "Pioneer" in the funeral train, taking several days to prepare for it by sending out gangs of men to cut off the station platforms and alter the bridges. Pullman's dream was realized; his "coach of the future," with its escort of statesmen, carried the dead President to his grave and became noted throughout the land. A few weeks later, General Grant, fresh from the conquest of the Rebellion, had a triumphal progress from the camp to his home in Illinois. Five days were spent in clearing the railway between Detroit and Galena, where he lived, and the "Pioneer" carried Grant over that line.

These successes made Pullman's fortune, and the business of his company grew rapidly afterwards, it being now an enormous concern with \$70,000,000 capital, controlling practically all the sleeping-cars of this country and many abroad. The main works are at the Chicago suburb of Pullman, ten miles south of the centre of the city, where there are about twelve thousand population, most of the people

being connected with the works, which are an extensive general car-building establishment. Pullman was built as a model town, with every improvement calculated to add to the comfort and health of the working-people, being also provided with its own library, theatre, and a tasteful arcade, in which are various shops. It was at Pullman in 1894 that the great strike took place which ultimately involved a large portion of the railways of the country, causing much rioting and bloodshed, and finally requiring the intervention of the Federal troops to maintain the peace. After a protracted period of turmoil, the strike failed.

THE CORN CROP.

Chicago is the *entrepôt* for the great prairie region spreading from the Alleghenies westward beyond the Mississippi. Here grows the grain making the wealth of the land, and feeding the cattle, hogs and sheep that are poured so liberally into the Union Stock Yards of the Lake City. Upon the crops of this vast prairie land depends the prosperity of the country. Wall Street in New York and the Chicago Board of Trade are the market barometers of this prosperity, for the prairie farmer, as he may be rich and able to spend money, or poor so that he cannot even pay his debts, controls the financial outlook in America. The traveller, as he glides upon this universal prairie land, east, south and west of Chicago, viewing its limitless fertility seen far away in every direction over the monotonous level, as if looking across an ocean, cannot help recalling Wordsworth's pleasant lines:

The streams with softest sound are flowing,
The grass you almost hear it growing,
You hear it now, if e'er you can."

Then, as the crops ripen and are garnered, and the wealth of the prairie is turned into food for the world, there comes with the advancing autumn the ripening of the greatest crop of America, and the mainstay of the country, the Indian corn. It is wonderful to think that the first corn crop of the United States planted by white men at Jamestown, Virginia, on a field of forty acres in 1608, has grown to an annual yield approximating twenty-three hundred million bushels. This prolific crop is the banner product of the great prairie, and Whittier in his "Corn Song" has recorded its glories:

Heap high the farmer's wintry hoard!
Heap high the golden corn!

No richer gift has autumn poured
From out the lavish horn!

"Let other lands, exulting, glean
The apple from the pine,
The orange from its glossy green,
The cluster from the vine;

"We better love the hardy gift
Our rugged vales bestow,
To cheer us when the storm shall drift
Our harvest fields with snow.

"Through vales of grass and meads of flowers,
Our plows their furrows made,
While on the hills, the sun and showers
Of changeful April played.

"We dropped the seed o'er hill and plain
Beneath the sun of May,
And frightened from our sprouting grain
The robber crows away.

"All through the long bright days of June
Its leaves grew green and fair,
And waved in hot midsummer's noon
Its soft and yellow hair.

"And now, with autumn's moonlit eves,
Its harvest time has come,
We pluck away the frosted leaves,
And bear the treasure home.

"There, richer than the fabled gift
Apollo showered of old,
Fair hands the broken grain shall sift,
And knead its meal of gold.

"Let vapid idlers loll in silk
Around their costly board;

Give us the bowl of samp and milk
By homespun beauty poured!

"Where'er the wide old kitchen hearth
Sends up its smoky curls,
Who will not thank the kindly earth,
And bless our farmer girls!

"Let earth withhold her goodly root,
Let mildew blight the rye,
Give to the worm the orchard's fruit,
The wheat-field to the fly;

"But let the good old corn adorn
The hills our fathers trod;
Still let us for his golden corn
Send up our thanks to God!"

GLIMPSES OF THE GREAT NORTHWEST.

VII.

GLIMPSES OF THE GREAT NORTHWEST.

The Great Lakes—Sieur de La Salle—Lake St. Clair—Lake Huron—Detroit—Ann Arbor—Mackinac Island—Sault Sainte Marie—Lake Superior—Lake Nepigon—Thunder Bay—Port Arthur—Kakabika Falls—The Pictured Rocks—Marquette—Keweenaw—Iron and Copper—Houghton—Lake Gogebic—Superior City—Duluth—Messabi and Vermillion Ranges—Green Bay—Wisconsin—Milwaukee—Waukesha—Madison—Rock Island—Davenport—Moline Rapids—Dubuque—Iowa—Black Hawk—Minnesota—La Crosse—Lake Pepin—Falls of St. Anthony—St. Paul—Minneapolis—Fort Snelling—Flour and Lumber—Lake Minnetonka—Minnehaha Falls—Hiawatha and Minnehaha—Source of the Mississippi—Itasca Lake—Minnesota River—Red River of the North—Ancient Lake Agassiz—Sioux Falls—Fargo—Great Wheat Farms—Manitoba—Rat Portage—Keewatin—Winnipeg—Hudson Bay Company—Dakota—Bismarck—The Bad Lands—Yellowstone River—Montana—Big Horn River—Custer Massacre—Livingston—Cinnabar Mountain—Yellowstone National Park—Mammoth Hot Springs—Norris Geyser Basin—Firehole River—Lower, Middle and Upper Geyser Basins—Yellowstone Lake and Falls—The Grand Canyon—Two-Ocean Pond—Westward the Course of Empire Takes its Way.

THE GREAT LAKES.

René Robert Cavelier, the Sieur de La Salle, was the chief French pilgrim and adventurer in the seventeenth century who explored the Great Lakes and valley of the Mississippi, and secured for his country the vast empire of Louisiana, stretching from Canada to the Gulf. His explorations were made in 1669 and again in 1678, and like all the discoverers of that early time he was hunting for the water way thought to lead to the South Sea and provide a route to China. The historian Parkman describes La Salle as one of the most remarkable explorers whose names live in history; the hero of a fixed idea and determined purpose; an untiring pilgrim pushing onward towards the goal he was never to attain; the pioneer who guided America to the possession of her richest heritage. Throughout the northwest his memory is preserved in the names of rivers, towns, and otherwise, and his maps and narratives gave the earliest geography of the Lakes and the vast and prolific region obtained from France in the Louisiana cession.

The Great Lakes on the northern border of the United States are the largest bodies of fresh water on the globe. They carry an enormous commerce, nearly a hundred thousand men being employed by the fleet of lake vessels, which approximates two millions tonnage. At the head of Lake Erie the waters of Detroit River pour in, draining the upper lakes, this stream, about twenty-five miles long, flowing from Lake St. Clair and broadening from a half-mile to four miles width at its mouth. Lake St. Clair is elevated five hundred and thirty feet, but is small, being about twenty-five miles in diameter, and shallow, only about twenty feet deep. The navigation of its shallows is intricate, and is aided by a long canal through the shoals at the upper end, where the St. Clair River discharges, a strait about forty miles long, flowing south from Lake Huron. This great lake is at five hundred and eighty feet elevation, and in places seventeen hundred feet deep, covering twenty-four thousand square miles, and containing many islands. At its northern end, Lakes Superior and Michigan join it by various straits and water ways beyond Mackinac Island. Westward of Lakes Ontario and Erie, and between them and Lake Huron, a long peninsula of the Dominion of Canada projects southward into the United States, terminating opposite Detroit. Similarly, to the westward of Lake Huron, and between it and Lake Michigan, the State of Michigan has its lower peninsula projecting upward to Canada. The Canadian projection, which is part of Ontario Province, is unfortunately located, being almost surrounded by these expansive lakes, having bleak, cold winds sweeping across them and seriously impeding its agriculture. The surface has little charm of scenery and the population is sparse. The trunk railways, however, find this an almost direct route from Western New York to Detroit and Chicago, and various roads traverse it, coming out on the Detroit River and the swift-flowing St. Clair River, which are crossed both by car-ferry and tunnel. At the outlet of Lake Huron, St. Clair River is less than a thousand feet wide between Point Edward and Fort Gratiot, and here and at Ports Sarnia and Huron the low and level shores are lined with docks, elevators and other accessories of commerce. This river brings vast amounts of sand down out of Lake Huron with its swift current, which are deposited on the St. Clair Flats beyond its mouth, keeping that lake shallow, and requiring the long ship canal to maintain navigation. Below Lake St. Clair, the wider Detroit River presents many fine bits of scenery, while the city of Detroit spreads for several miles along the northwestern bank, and has Windsor opposite, on the Canadian shore. Pretty islands dot the broadening stream below Detroit, and the varying width, with the bluffs on the Canadian side, and the meadows, fields and forests of Michigan, give lovely views.

DETROIT AND MACKINAC.

Detroit means "the strait," and the original Indian names for the river mean "the place of the turned channel." The early visitors who reached it by boat at night or in dark weather, and were inattentive to the involved currents, always remarked, as the Indians did before them, that owing to these extraordinary involutions of the waters, when the sun appeared again it always seemed to rise in the wrong place. The French under La Salle were the first Europeans who passed through the river, and in 1701 the Sieur de la Mothe Cadillac, who received grants from Louis XIV., came and founded Fort Pontchartrain there, naming it after the French Minister of Marine, around which a settlement afterwards grew, to which the French sent colonists at intervals. The British got possession in 1760, and it successfully resisted the conspiracy and attacks of the Ojibway Indian chief Pontiac for over a year, the garrison narrowly escaping massacre. The United States, after the Revolution, sent out General St. Clair as Governor, and his name was given the lake to the northward. Detroit was a frontier post in the War of 1812, being alternately held by British and Americans. In 1824 it had about fifteen hundred people and became a city. It now has three hundred and fifty thousand population, and its commercial importance may be estimated from the fact that the whole enormous traffic of the Lakes passes in front of the city during the seven months that navigation is open, the procession of craft often reaching sixty thousand vessels in the season. Detroit also has extensive and varied manufactures. It has a gradually rising surface and broad and well-paved streets on a rectangular plan, with several avenues radiating from a centre, like the spokes of a wheel. The central square is the Campus Martius, an expansion, about a half-mile from the river, of Woodward Avenue, the chief street. Here is an elaborate City Hall, the principal public building, having in front a magnificent Soldiers' Monument. The suburbs are attractive, and there are various pleasant parks and rural cemeteries, the leading Park of Belle Isle, covering seven hundred acres, being to the northeastward, with a good view over Lake St. Clair. Fort Wayne, the elaborate defensive work of Detroit, is on the river just below the city, and has a small garrison of regular troops. It is yet incomplete, and is designed to be the most extensive fortification on the northern frontier, commanding the important passage between Lakes Huron and Erie and the railway routes east and west.

The peninsula of Michigan was originally covered with the finest forests, so that lumbering has always been a leading industry of the people. The greater portion of its pine woods, however, has been cut off, so that that branch is declining; but

its ample supply of hard woods has made the State a great manufacturer of furniture, which is shipped all over the country. Thirty-eight miles west of Detroit, on the Huron River, is the city of Ann Arbor, with a population of fifteen thousand. Here are the extensive buildings of the University of Michigan, the leading educational establishment of the northwest, attended by over three thousand students, of whom a large number are young women. It is richly endowed, and has departments of law and medicine, as well as of literature and science, a large library and an observatory. The State makes a liberal annual contribution for its support, raised by taxation, it being governed by eight regents elected by the people. At the northern extremity of the Michigan Peninsula is the Strait of Mackinac, through which Lake Michigan discharges into Lake Huron. This water way is about four miles wide. In the strait is Mackinac Island, about nine miles in circumference, which was early held by the French on account of its strategic importance, but, being taken by the English in 1760, was captured by Pontiac when he organized the Indian revolt against the British in 1763, and all its inhabitants massacred. It is now a military post and reservation of the United States. This rocky and wooded island contains much picturesque scenery, and is a favorite summer resort, its weird legends, fresh breezes, good fishing and clear waters being the attraction. It was an early post of the northwestern fur-traders, and here was founded one of the frontier trading-stations of the Astor Fur Company in the early nineteenth century by John Jacob Astor of New York, the building in the little village being still known as the Astor House.

LAKE SUPERIOR.

To the northward of Mackinac, Lake Superior discharges into Lake Huron through the Sault Sainte Marie Strait, the "Leap of St. Mary." This strait of St. Mary is a winding and most beautiful stream, sixty-two miles long, being a succession of expansions into lakes and contractions into rivers, dotted with pretty islands and having some villages on the banks. The chief attraction is the Sault, or "Leap," which is a rapid of about eighteen feet descent, the navigation being maintained through capacious modern systems of locks and ship canals provided by both the United States and Canada. To the westward is the great Lake Superior, the largest fresh-water lake on the globe, three hundred and sixty miles long and covering thirty-two thousand square miles, with a coast-line of about fifteen hundred miles. It is elevated about six hundred feet above the ocean level, and has a depth averaging one thousand feet. Nearly two hundred rivers and creeks flow into it, draining a region of a hundred thousand square miles.

There are a few islands in the eastern and western portions, but all the centre of the lake is a vast unbroken sheet of water, and generally of a low temperature, the deeper waters being only 39° in summer. The early French missionaries, who were the first explorers, told their interesting story of Lake Superior in Paris in 1636, and in their published account speak of its coasts as resembling a bended bow, of which the north shore makes the arc of the bow, the south shore the chord, and the great Keweenaw Point, projecting far from the southern shore, represents the arrow. Superior has generally a rock-bound coast, displaying impressive beauties of scenery, particularly on the northern shore, where the beetling crags and cliffs are projected boldly into the lake along the water's edge. This northern coast is also much indented by deep bays, bordered by precipitous cliffs, back of which rise the dark and dreary Laurentian Mountains. There are also rocky islands scattered near this portion of the coast, some presenting vast castellated walls of basalt and others peaks of granite, elevated a thousand to thirteen hundred feet above the lake. Nowhere upon the inland waters of North America is there grander scenery.

The most considerable affluent of Lake Superior upon its northern coast is the Nepigon River, coming grandly down cascades and rapids, bringing the waters of Lake Nepigon, an elliptical lake among the mountains to the northward covering about four thousand square miles, bounded by high cliffs, and elevated over eight hundred feet. It is studded with islands, has very deep waters, and receives various streams from the remote northern wilderness. Upon the northwestern shore of Lake Superior are gigantic cliffs, surrounding Thunder Bay, a deep indentation divided from Black Bay by the great projecting promontory of Thunder Cape, rising nearly fourteen hundred feet in grand columns of basalt, the summit containing the crater of an extinct volcano. Across from it is McKay Mountain, another basaltic Gibraltar, rising twelve hundred feet from the almost level plain bordering the bay. Pic Island is between them, guarding the entrance. The pretty Kaministiquia River flows through rich prairie lands down to Thunder Bay, and here is the chief Canadian town on the lake, Port Arthur. Thirty miles up this river is the famous Kakabika Falls, where the rocks are cleft so that the stream tumbles into a chasm one hundred and thirty feet deep, and then boils along with rapid current for nearly a half-mile through the fissure, the sides towering perpendicularly, and in some places even overhanging their bases. Upon this river was for many years the well-known Hudson Bay Company's fur-trading station of Fort William, which now has grain elevators, and is a suburb of the spreading settlement of Port Arthur. This was the beginning of the great portage from Lake Superior over to the Hudson Bay

waters at Fort Garry, on the Red River in Manitoba, now Winnipeg, the portage being the present route of the Canadian Pacific Railway.

SAULT SAINTE MARIE TO DULUTH.

The southern shore of Lake Superior is mostly composed of lowlands, covered with sand, glacial deposits and clays, which came from the lake during a former stage of much higher water, when it extended many miles south of the present boundary. These lands, while not well adapted to agriculture, contain rich deposits of copper, iron and other metals and valuable red sandstones. Around the rapids and canals at the outlet has gradually grown the town of Sault Sainte Marie, familiarly known as the "Soo," having ten thousand people, and developing important manufactures from the admirable water-power of the rapids, which is also utilized for electrical purposes. An international bridge brings a branch of the Canadian Pacific Railway over from Canada, on its way to Minneapolis and St. Paul, with connections southward to Chicago, and there is also the military post of Fort Brady. Stately processions of vessels constantly move through the canals, being locked up or down when the navigation season is open, and making this a very animated place, over fifteen thousand ships passing in the seven months when the canals are free from ice. The tonnage is the greatest using any system of canals in the world, far exceeding Suez, and the recent improvements enable vessels of twenty-one feet draft to go through the new locks. Both Governments have expended millions upon these important public works, which are chiefly employed for the transport of grain, flour, coal, iron-ores and copper. The favorite sports at the "Soo" are catching white fish and "shooting the rapids" in canoes guided by the Indians, who are very skillful.

About one hundred miles westward from the "Soo," on the southern lake shore, there rise cliffs of the red and other sandstones formed by the edges of nearly horizontal strata coming out at the border of the lake. These are the noted Pictured Rocks, rising three hundred feet, extending for a distance of about five miles, and worn by frost and storm into fantastic and romantic forms, displaying vivid hues—red, blue, yellow, green, brown and gray—as they have been stained by the oozing waters carrying the pigments. At intervals, cascades fall over the rocks. One cliff, called the Sail Rock, is like a sloop in full sail, and there are various castles and chapels, and an elaborate Grand Portal. In the country around is laid much of the scene of *Hiawatha*, and at the little lake port of Munising, nearby, was the site of the wigwam of the old woman, Nokomis,

On the shores of Gitchee Gumee,
Of the shining Big-Sea-Water."

To the westward is the region of iron-ores, and here is Marquette, named for the great Jesuit missionary Father Marquette, who was the first founder of mission settlements in this region, and died in 1675 near the mouth of Marquette River. This town of fifteen thousand people is on Iron Bay, and is the chief port of the Marquette, Menominee and Ishpeming mines. Farther to the westward the great Keweenaw Peninsula projects, the name meaning in the Indian dialect the "canoe portage." At its base, the Portage Lake almost separates it from the mainland, and a short portage to the westward formerly carried the canoes over the narrow isthmus. A canal now enables the lake shipping to pass through without making the long detour around the outer end of the peninsula. Upon this rocky peninsula are the great copper-mines of Michigan, including the Quincy, Tamarack, Osceola, Franklin, Atlantic, and the Calumet and Hecla. The latter is the world's leading Copper Company, making over \$4,000,000 estimated annual profit, employing five thousand men, and having the deepest shaft in existence, the Red Jacket, which has been sunk forty-nine hundred feet. Houghton, on the southern shore of Portage Lake, is the leading town of the copper district. To the southwestward and in the western part of the Upper Michigan Peninsula is Lake Gogebic, elevated thirteen hundred feet, in another prolific iron-ore district, the Gogebic range, which produces Bessemer ores, and has its shipping port across the Wisconsin boundary at Ashland, another busy town of fifteen thousand people at the head of Chequamegon Bay. Out in front are the Apostle Islands, a picturesque group, and to the westward the head of Lake Superior gradually narrows in the Fond du Lac, or end of the lake, where are situated its leading ports, Superior City in Wisconsin and Duluth in Minnesota.

Here in the seventeenth century came the early French, and in 1680 a trading-post was established by Daniel du Lhut, afterwards becoming a Hudson Bay Company Station. The mouth of St. Louis River and its bay were naturally recognized as important points for trade, and when the Northern Pacific Railway was projected Superior City got its start. The first railroad scheme failed, the panic of 1857 came, and the railway project was abandoned until after the Civil War; and then, when it was renewed, the terminus was located over on the other side of the river, the place being named Duluth, after the French trader. While there has been great rivalry between them, and Duluth has outstripped Superior, yet the latter has an extensive trade and thirty thousand people. Duluth, the "Zenith City of the Unsalted Seas," as it has been ambitiously called, was

originally projected on Minnesota Point, a scythe-shaped natural breakwater running out seven miles into the lake, which protects the harbor, but the town was subsequently built farther in. There were about seventy white people in the neighborhood in 1860, and in 1869 its present site was a forest, while the railroad, which had many set-backs, had only brought about three thousand people there in 1885. The completion of other railway connections in various directions, the discovery of iron deposits, and the recognition of its advantageous position for traffic, subsequently gave Duluth rapid growth, so that it now has eighty thousand people, and is the greatest port on the lake. It is finely situated, the harbor being spacious and lined with docks and warehouses, and it has many substantial buildings. Back of the city a terrace rises some four hundred feet, an old shore line of Lake Superior when the water was at much higher level, and here is the Boulevard Drive, giving splendid views over the town and lake. The vast extent of wheat lands to the westward and the prolific iron-ore district to the northward give Duluth an enormous trade. Its railways lead up to the Messabi and Vermillion ranges, now the greatest producers of Lake Superior iron-ores, the red hematite, most of the output being controlled by John D. Rockefeller and his associates. These mines yield the richest ores in the world, and have made some of the greatest fortunes in Duluth. Yet they were not discovered until 1891, and then the lands where they are generally went begging, because nobody would give the government price for them, \$1.25 per acre. One forty-acre tract, then abandoned by the man who took it up because he did not think the pine wood on it was enough to warrant paying \$50 for it, is now the Mountain Iron Mine, netting Mr. Rockefeller \$375,000 annual profit, and his railroad bringing the ores out gets more than that sum for freights.

THE CITY OF MILWAUKEE.

The early French traders and explorers who came to the upper lakes naturally ascended their affluents, and in this way La Salle, Joliet, Hennepin and others crossed the portages beyond Lake Michigan to the tributaries of the Mississippi. They came to Green Bay on the west side of Lake Michigan, ascended the Fox River and crossed over to the Wisconsin River. Southward from the Upper Michigan Peninsula and westward of the lower peninsula of that State spreads the broad expanse of Lake Michigan, stretching from Mackinac and Green Bay down to Chicago. Its western shore is the State of Wisconsin, extending northward to Lake Superior. When the French explorers came along and floated down its chief river, an affluent of the Mississippi, the latter making the western

boundary of the State, they found the Indian name of the stream to be a word which, according to the pronunciation, they spelled in their early narratives "Ouisconsing" and "Misconsin," and it finally came out in the present form of Wisconsin, thus naming the State. The original meaning was the "wild, rushing red water," from the hue given by the pine and tamarack forests. La Salle coasted in his canoe all along the western shore of Lake Michigan, from Green Bay down to Chicago, and crossed over to the Mississippi. The traders established various settlements on that shore which have grown into active cities, and the principal one, eighty-five miles north of Chicago, is Milwaukee, its name derived from the Indian Mannawahkie, meaning the "good land." A broad harbor, indented several miles from the lake, was the nucleus of the city, at the mouth of Milwaukee River, which receives two tributaries within the town, and thus adds to the facilities for dockage, while extensive breakwaters protect the harbor entrance from lake storms.

Milwaukee has three hundred and fifty thousand people, and is the growth mainly of the latter half of the nineteenth century. It is finely located, with undulating surface, the streets lined with trees, and the splendid development of the residential section making it almost like an extensive park, the foliage and garden spaces are so extensive and attractive. Its population is largely German, and its breweries are famous, exporting their product all over the country. It has a grand Federal building, costing nearly \$2,000,000, a Romanesque structure in granite, an elaborate Court-house of brown sandstone, a spacious City Hall, a magnificent Public Library and Museum, and many attractive churches and other edifices. Juneau Park, on a bluff overlooking the lake, commemorates the first settler, Solomon Juneau, and contains his statue. Here, in compliment to the large Scandinavian population of Wisconsin, is also a statue of Leif Ericson, who is said to have been in command of the first detachment of Norsemen who landed in New England in the eleventh century. The Forest Home Cemetery at the southwestern verge of the city is one of the most beautiful in the country. Milwaukee is familiarly called the "Cream City" from the light-colored brick made in the neighborhood, which so largely enter into the construction of its buildings. It has extensive grain elevators and flour mills and large manufacturing industries. To the westward, in a park of four hundred acres, is the National Soldiers' Home, with accommodation for twenty-four hundred. Its Sheridan Drive along the lake shore southward is gradually extending, the intention being to connect with the Sheridan Boulevard constructed northward from Chicago. The lion of the city, however, is the great Pabst Brewery, covering thirty-four acres and producing eight hundred thousand barrels of beer a year.

Twenty miles inland to the westward is a favorite resort of the Milwaukeeans, the noted Bethesda Spring of Waukesha, whose waters they find it beneficial to take copiously, large quantities being also exported throughout America and Europe for their efficacy in diabetes and Bright's disease.

The capital of Wisconsin is the city of Madison, seventy-five miles west of Milwaukee, built on the isthmus between Lakes Mendota and Monona, thus giving it an admirable position. It has about twenty thousand people, and the lake attractions make it a popular summer resort. The State Capitol is a handsome building in a spacious park, one of the wings being occupied by the Wisconsin Historical Society, with a library of two hundred thousand volumes, an art gallery and museum. The great structure of Madison is the University of Wisconsin, the buildings in a commanding position on University Hill overlooking the charming Lake Mendota. There are seventeen hundred students, and its Washburn Observatory, one of the best in America, has wide fame.

ASCENDING THE MISSISSIPPI.

Westward from Lake Michigan all the railroads are laid across the prairie land *en route* to various cities on the Mississippi River, several of them having St. Paul and Minneapolis for their objective points, although some go by quite roundabout ways. The great "Father of Waters" comes from Northern Minnesota, flows over the Falls of St. Anthony at Minneapolis, and is a river of much scenic attractiveness down to Dubuque and Rock Island, its width being usually about three thousand feet, excepting at the bends, which are wider, the picturesque bluffs enclosing the valley sometimes rising six hundred feet high. The railways leading to it traverse the monotonous level of prairie in Illinois and Wisconsin, excepting where a stream may make a gorge, and the face of the country is everywhere almost the same. The Moline Rapids in the Mississippi above Rock Island afford good water-power, and here the Government, owning the island, has established a large arsenal, which is the base for all the western army supplies. The admirable location has made cities on either bank, Rock Island in Illinois and Davenport in Iowa, both being commercial and manufacturing centres, and the latter city having the larger population. The Mississippi flows through a rather wide valley, with pleasant shores, having villas dotted on their slopes. The Moline Rapids, which are said to have a water-power rivalling the aggregate of all the cataracts in New England, descend twenty-two feet in a distance of fourteen miles. Above them, the river flows between Illinois and Iowa, and various flourishing towns are passed, the largest being Dubuque, with

fifty thousand people, the chief industrial city of Iowa, and a centre of the lead and zinc manufacture of the Galena district. This was the first settlement made by white men in Iowa, the city being named for Julien Dubuque, a French trader, who came in 1788 with a small party to work the lead-mines. Iowa is known as the "Hawkeye State," and its name is of Dakotan Indian derivation, meaning "drowsy," which, however, is hardly the proper basis for naming such a wide-awake Commonwealth. Opposite Dubuque is the northern boundary of Illinois, and above, the Mississippi separates Iowa from Wisconsin.

The Mississippi bordering bluffs now rise much higher and become more picturesque, Eagle Point, near Dubuque, being elevated three hundred feet. Prairie du Chien, just above the mouth of Wisconsin River, was one of the earliest French military posts. This region was the scene of the "Black Hawk War," that chief of the Sacs battling to get back certain lands which in 1832 had been ceded by the Sac and Fox Indians to the United States. He was finally defeated back of the western river shore, the boundary between Iowa and Minnesota being nearby. Minnesota is the "North Star State," and its Indian name, taken from the river, flowing into the Mississippi above St. Paul, means the "cloudy water." The river scenery becomes more and more picturesque as the Mississippi is ascended, the bluffs rising to higher elevations. La Crosse is a great lumber manufacturing town, drawing its timber from both Minnesota and Wisconsin. Above, where islands dot the channel, is perhaps the most beautiful section of the river. Trempealeau Island, five hundred feet high, commands a magnificent view, and the Black River flows in through a splendid gorge. Winona is a prominent grain-shipping town, and at Wabasha the river expands into the beautiful Lake Pepin, thirty miles long and from three to five miles wide, with attractive shores and many popular resorts. Over the lake rise the bold round headland of Point No Point on one side and the Maiden Rock on the other. St. Croix River flows in above on the eastern bank, making an enlargement known as St. Croix Lake, and the upper Mississippi is now wholly within Minnesota, having here at the head of navigation the famous "Twin Cities" of St. Paul and Minneapolis.

THE FALLS OF ST. ANTHONY

Father Hennepin was the first white man who penetrated the wilds of Minnesota, and in 1680 he discovered the great falls of the Mississippi River, to which he gave the name of his patron saint, Anthony of Padua. The river just below the falls naturally attracted the attention of the French adventurers who came to

trade with the Sioux, Chippewas and Dakotas, and the first white man who tarried and built a house here was a Canadian voyageur, who came in 1838. In 1841 a French priest established the Roman Catholic mission of St. Paul on the bank of the river, and thus the settlement was named. The admirable water-power of the falls, which, with their two miles of rapids, descend seventy-eight feet, afterwards attracted the attention of millers, lumbermen and other manufacturers, and this made the settlement of Minneapolis, ten miles westward and farther up the river, which began in 1849, the name meaning the "city of the waters." St. Paul grew with rapidity, being encouraged both by steamboat and afterwards by railway traffic; but Minneapolis, though started later, subsequently outstripped it. The two places, rivals yet friends, have extended towards each other, so as to almost form one large city, and they now have over four hundred thousand inhabitants. These "Twin Cities" are running a rapid race in prosperity, each independently of the other. St. Paul is rather more of a trading city, while Minneapolis is an emporium of sawmills and the greatest flour-mills in the world. Both are admirably located upon the bluffs rising above the Mississippi. St. Paul is situated upon a series of ornamental semicircular terraces that are very attractive, though in some portions rather circumscribed. Minneapolis is built on a more extensive plan upon an esplanade overlooking the falls, and extending to an island in midstream, and also over upon the opposite northern side of the river. The Falls of St. Anthony is the most powerful waterfall in the United States wholly applied to manufacturing purposes. The entire current of the Mississippi comes down the rapids and over the falls, the latter having a descent of about fifty feet. It is protected by a wall built by the Government across the river, to prevent the wearing away of the sandstone formation, there having been serious inroads made, while the surface is covered with an apron of planks over which the water runs, with sluiceways alongside to shoot logs down. However much Father Hennepin may have admired the beauties of this great cataract, there is no longer anything picturesque about the Falls of St. Anthony. Logs jam the upper river, where the booms catch them for the sawmills, and subterranean channels conduct the water in various directions to the mills, and discharge their foaming streams below. There is no romance in the rumble of flour-rollers and the buzz of saws, but they mean a great deal of profitable business. The force exerted by the falls at low water is estimated at one hundred and thirty-five thousand horse-power.

St. Paul is the capital of Minnesota, and the State is building a magnificent new Capitol, constructed of granite and marble, with a lofty central dome, at a cost exceeding \$2,000,000. There is a fine City Hall and many imposing and

substantial business edifices. Its especial residence street, Summit Avenue, is upon a high ridge, parallel with and some distance back from the Mississippi, the chief dwelling, a large brownstone mansion, being the home of the leading railroad prince of the Northwest, President James J. Hill of the Great Northern Railroad. Here is also the new and spacious Roman Catholic Seminary of St. Thomas Aquinas. The old military post of Fort Snelling is on the river above St. Paul, near the mouth of Minnesota River. In Minneapolis, the great building is the City Hall, completed in 1896, and having a tower rising three hundred and fifty feet, giving a superb view. The Guaranty Loan Company's Building is one of the finest office structures in America, with its roof arranged for a garden, where concerts are given. Minneapolis has a widely extended residential section, with hundreds of attractive mansions in ornamental grounds. Near the river bank is the University of Minnesota, having well-equipped buildings and attended by twenty-eight hundred students.

Minneapolis is the greatest flour manufacturing city in the world. Its mills, of which there are some twenty-five, are located along the river near the falls, and have a daily capacity of over sixty thousand barrels, turning out about eighteen millions of barrels annually, which are sent all over the globe. The whole country west and northwest of Minneapolis, including the Red River Valley, the Dakotas and Manitoba, is practically a fertile wheat field, growing the finest grain that is produced in America, and this makes the prosperity of the city. The Pillsbury-Washburn Flour Mills Company are the leading millers. The great Pillsbury A mill, which turns out ten thousand seven hundred barrels a day, is the world's champion flour-mill. It is a marvel of the economical manufacture, the railway cars coming in laden with wheat, being quickly emptied, and then filled with loaded flour-barrels and sacks for shipment. Machinery does practically everything from the shovelling of wheat out of the car to the packing of the barrel or sack with the product. This huge mill stands in relation to the flour trade as Niagara does to waterfalls. The other great Minneapolis industry is the lumber trade. Minnesota is well timbered, a belt of fine forests, chiefly pine, stretching across it, known as the *Coteau des Bois*, or "Big Woods," an elevated plateau with a rolling surface, having thousands of lakes scattered through it, fed by springs, while their outlets go into streams feeding the Mississippi, down which the logs are floated to the booms above the falls. The extensive sawmills will cut over four hundred and fifty millions of feet of lumber in a year. Thus the flour and lumber have become the chief articles of export from Minneapolis.

There are several pleasant lakes in the neighborhood, which are popular resorts

of the people of the "Twin Cities," the largest and most famous being Minnetonka, the Indian name meaning the "Big Water." It is a pretty lake, at nearly a thousand feet elevation, with low, winding and tree-clad shores, having little islets dotted over its surface, and myriads of indented bays and jutting peninsulas which extend its shore line to over a hundred miles, though the extreme length of the lake is barely seventeen miles. There are many attractive places on the shores and islands, and large steamers ply on its bosom. From this lake the discharge is through the Minnehaha River, and its Minnehaha Falls, the "Laughing Water," poetically praised by Longfellow in *Hiawatha*. The beautiful glen in which this graceful cataract is found has been made a park. The falls are about fifty feet high, and a critical observer has recorded that there is "only wanting a little more water to be one of the most picturesque cascades in the country." Below the Minnehaha Falls is another on a smaller scale, which the people thereabout have nicknamed the "Minnegiggle." Thus sings Longfellow of Minnehaha:

"Homeward now went Hiawatha;
Only once his pace he slackened,
Only once he paused or halted,
Paused to purchase heads of arrows
Of the ancient Arrow-maker,
In the land of the Dacotahs,
Where the Falls of Minnehaha
Flash and gleam among the oak-trees,
Laugh and leap into the valley.

"There the ancient Arrow-maker
Made his arrow-heads of sandstone,
Arrow-heads of chalcedony,
Arrow-heads of flint and jasper,
Smoothed and sharpened at the edges,
Hard and polished, keen and costly.

"With him dwelt his dark-eyed daughter,
Wayward as the Minnehaha,
With her moods of shade and sunshine,
Eyes that smiled and frowned alternate,
Feet as rapid as the river,
Tresses flowing like the water,
And as musical a laughter;
And he named her from the river,
From the water-fall he named her,
Minnehaha, Laughing Water.

"Was it then for heads of arrows,
Arrow-heads of chalcedony,
Arrow-heads of flint and jasper,
That my Hiawatha halted
In the land of the Dacotahs?

"Was it not to see the maiden,
See the face of Laughing Water,
Peeping from behind the curtain,
Hear the rustling of her garments,
From behind the waving curtain,
As one sees the Minnehaha
Gleaming, glancing through the branches,
As one hears the Laughing Water,
From behind its screen of branches?

"Who shall say what thoughts and visions
Fill the fiery brains of young men?
Who shall say what dreams of beauty
Filled the heart of Hiawatha?
All he told to old Nokomis,
When he reached the lodge at sunset,
Was the meeting with his father,
Was his fight with Mudjekeewis;
Not a word he said of arrows,
Not a word of Laughing Water."

THE SOURCE OF THE MISSISSIPPI.

It was in Minnesota, in 1862, that the terrible Indian uprising occurred in which the Sioux, exasperated by the encroachments of the whites, attacked the western frontier settlements in August, and in less than two days massacred eight hundred people. The troops were sent as soon as possible, attacked and defeated them in two battles, and thirty-eight of the Indians were executed on one scaffold at Mankato, on the Minnesota River southwest of Minneapolis, in December. The State of Minnesota is said to contain fully ten thousand lakes of all sizes, the largest being Red Lake in the northern wilderness, having an area of three hundred and forty square miles. The surface of the State rises into what is known as the Itasca plateau in the northern central part at generally about seventeen hundred and fifty feet elevation. From this plateau four rivers flow out in various directions—the one on the Western Minnesota boundary, the Red River of the North, draining the western slope towards Lake Winnipeg and finally to Hudson Bay; the Rainy River, draining the northern slope also through Lake Winnipeg to Hudson Bay; the St. Louis River, flowing eastward to form the head of Lake Superior, and going thence to the Atlantic; and the Mississippi River, flowing southward to seek the Gulf of Mexico. Schoolcraft, the Indian ethnologist and explorer, named this Itasca plateau, and the little lake in its heart, where the Mississippi takes its rise, about two hundred miles north-northwest of Minneapolis, though the roundabout course of the river from its source to that city is a much longer distance, flowing nearly a thousand miles. There was a good deal of discussion as to whether this lake was really the head of the great river, as the lake received several small streams, but Schoolcraft settled the dispute, and named the lake Itasca, from a contraction of the Latin words *veritas caput*, the "true head." Its elevation is about sixteen hundred feet, being

surrounded by pine-clad hills rising a hundred feet higher. Out of Itasca Lake the "Father of Waters" flows with a breadth of about twelve feet, and a depth ordinarily of less than two feet. It goes at first northerly, and then makes a grand curve through a long chain of lakes, describing a large semicircle to the eastward, and finally southwest, before it becomes settled as to direction, and takes its southeast course towards the Falls of St. Anthony, and onward in its grand progress to the Gulf.

THE ANCIENT LAKE AGASSIZ.

The Minnesota River, rising on the western boundary of the State, flows nearly five hundred miles in a deeply carved valley through the "Big Woods" to the Mississippi. Its source is in the Big Stone Lake, which, with Lake Traverse to the northward, forms part of the Dakota boundary. The Red River of the North, rising in Lake Traverse and gathering together the streams on the western slope of the Itasca plateau, flows northward between Minnesota and North Dakota, and into Manitoba, two hundred and fifty miles to Lake Winnipeg. This river has cut its channel in a nearly level plain, and it is curious that in times of freshet its waters connect, through Lakes Traverse and the Big Stone, with the Minnesota, so that steamboats of light draught can then occasionally pass from the Mississippi waters north to Lake Winnipeg. It was this rich and level plain of the valley of the Red River that in the glacial epoch formed the bed of a vast lake which scientists have named Lake Agassiz. Its area, as indicated by well-marked shore-lines and deltas, was a hundred miles wide and over four hundred miles long, stretching far into Manitoba, and the waters were two to four hundred feet deep. It was held up on the north by the retreating ice-sheet of the great glacier, the outlet being southward, where a channel fifty feet deep, fifty miles long and over a mile wide can now be distinctly traced leading its outflow into the Minnesota River, whose valley its floods then greatly enlarged on the way to the Mississippi. The plain of this lake bed is almost level, descending towards the northward about a foot to the mile, and here the ancient lake deposited the thick, rich, black soils which have made the greatest wheat-growing region of North America.

The first settlement of Dakota was on the Big Sioux River at Sioux Falls, where flour-mills and other manufacturing establishments have gathered around a fine water-power, and there are nearly fifty thousand people in the two towns of Sioux Falls in South Dakota and Sioux City in Iowa. The whole region to the northward and far over the Canadian boundary is a land of wheat-fields, with

grain elevators dotting the flat prairie at the railway stations, for all the roads have lines to tap the lucrative trade of this prolific region. The Northern Pacific Railway crosses Red River at Fargo, which, with the town of Moorhead, both being wheat and flour centres, has a population of fifteen thousand. To the westward are the vast "Bonanza" wheat farms of Dakota, of which the best known is the Dalrymple farm, covering forty-five thousand acres. Steam-ploughs make continuous furrows for many miles in the cultivation, and in the spring the seeding is done. The whole country is covered with a vast expanse of waving, yellow grain in the summer, and the harvest comes in August. To the westward flows James River through a similar district, and the country beyond rises into the higher plateau stretching to the Missouri. This fertile wheat-growing region extends far northward over the Canadian border forming the Province of Manitoba, the name coming from Lake Manitoba, which in the Cree Indian dialect means the "home of Manitou, the Great Spirit." Its enormous wheat product makes the business of the flouring-mills of Minneapolis, Duluth and many other cities, and furnishes a vast stream of grain to go through the Soo Canal down the lakes and St. Lawrence, much being exported to Europe.

The Canadian Pacific Railway, which provides the traffic outlet for Manitoba, comes from the northern shore of Lake Superior at Port Arthur northwestward up the valley of the Kaministiquia River, and its tributary the Wabigoon, the Indian "Stream of the Lilies." This was the ancient portage, and by this trail and Winnipeg River, the canoe route of the Hudson Bay Company voyageurs, Lord Wolseley led the British army in 1870 to Fort Garry (Winnipeg) that suppressed Louis Riel's French-Indian half-breed rebellion, which had possession of the post. The railway route is through an extensive forest, and leads near the northern shore of the Lake of the Woods, crossing its outlet stream at Rat Portage, so named from the numerous colonies of muskrats, a town of sawmills standing at the rocky rim of the lake, where its waters break through and down rapids of twenty feet fall to seek Winnipeg River, the Ounipigon or "muddy water" of the Crees. Here, and at Keewatin beyond, are grand water-powers, the latter having mammoth mills that grind the Manitoba wheat and send the flour to England. Then, emerging from the forests, the railway crosses the rich black soils of the Red River Valley, and beyond that river enters Winnipeg, the "Prairie City" and commercial metropolis of the Canadian Northwest. For nearly eight hundred miles this alluvial region spreads west and northwest of Winnipeg, with varying degrees of fertility, to the Rocky Mountains. Here, at the junction of the Assiniboine River, coming from the remote northwest, with Red River, has grown a Canadian Chicago of fifty thousand people, developed almost as if by

magic, from the little settlement of two hundred and forty souls, whom Wolseley found in 1870, around what was then regarded as the distant Hudson Bay Company frontier post of Fort Garry. Its original name when first established was Fort Gibraltar. The two rivers wander crookedly over the flat land, and between them the city covers an extensive surface. A half-dozen railways radiate in various directions, and there are spacious car-yards and stations. Winnipeg has an energetic population, largely Scotch and Americans, but with picturesque touches given by the copper-colored Indians and French half-breeds, who wander about in their native costumes, though most of these have gone away from Red River Valley to the far Northwest. The city has good streets, many fine buildings and attractive stores. The Manitoba Government Buildings adjoin the Assiniboine River, and the military barracks of Fort Osborne are alongside. Near the junction of the rivers is the little stone gateway left standing, which is almost all that remains of the original trading-post buildings of Fort Garry, representing the venerable Hudson Bay Company, chartered by King Charles II. in 1670, that controlled the whole vast empire of the Canadian Northwest. This Company was a grant by the king originally to Prince Rupert and a few associates of a monopoly of the fur trade over a vast territory in North America, extending from Lake Superior to Hudson Bay and the Pacific Ocean. In this way that portion of British America came to be popularly known in England as "Prince Rupert's Land." The great Company existed for nearly two hundred years, had one hundred and fifty-two trading-posts, and employed three thousand traders, agents and voyageurs, and many thousands of Indians. In the bartering with the red men, the unit of account was the beaver skin, which was the equivalent of two martens or twenty muskrats, while the pelt of a silver fox was five times as valuable as a beaver. In 1869, when the Dominion of Canada was formed, England bought the sovereignty of the Company for \$1,500,000 and transferred its territory to Canada. The Company still retains its posts and stores, however, and conducts throughout the Northwest a mercantile business. Far to the westward of Winnipeg spread the fertile prairies of Manitoba and Assiniboia Provinces, until they gradually blend into the rounded and grass-covered foothills making the grazing ranges of Alberta that finally rise into the snow-capped peaks of the Rockies.

DAKOTA AND MONTANA.

Three railways are constructed westward from Red River to the Rockies and Pacific Ocean,—the Northern Pacific and Great Northern in the United States

and the Canadian Pacific beyond the international boundary. The former cross the plateau to the Upper Missouri River, and there the Northern Pacific route reaches Bismarck, the capital of North Dakota, having a fine Capitol set on a hill, the corner-stone of which was laid in 1883, with the noted Sioux chief Sitting Bull assisting. This region not so long ago knew only soldiers and Indians; but there has since been a great influx of white settlers, enforcing the idea of which Whittier has significantly written:

Behind the squaw's birch-bark canoe,
The steamer smokes and raves;
And city lots are staked for sale
Above old Indian graves."

The frontier army post of Fort Lincoln on the bluff alongside the river testifies to the time not yet remote when the Sioux and Crow Indians of the Dakotas needed a good deal of military control. The deer, buffalo and antelope then roamed these boundless prairies, but they have all disappeared. Beyond the Missouri River is the region of the Dakota "Bad Lands." The surface rises into sharp conical elevations known as "buttes," and soon this curious district of pyramidal hills known as Pyramid Park is entered, fire and water having had a remarkable effect upon them. Their red sides are furrowed by the rains, and smoke issues from some of the crevices. The lignite and coal deposits underlying this country have produced subterranean fires that burnt the clays above until they became brittle and red. There are ashes and scoriæ in patches, and cinders looking much like the outcast of an iron furnace. The buttes are at times isolated and sometimes in rows, many being of large size. Their sides are often terraced regularly, and frequently into fantastic shapes, occasionally appearing as the sloping ramparts of a fort. There are frequent pot-like holes among them, filled with reddish, brackish water, and sometimes excavated in the ground with regularly square-cut edges. When the railway route cuts into a butte, its interior is disclosed as a pile of red-burnt clay fragments mixed with ashes and sand. Little prairie dogs dodge in and out of their holes, but there is not much else of life. The boundary is crossed into Montana, and the "Bad Lands" gradually give place to a grazing section. Here stands up the great Sentinel Butte, with its reddish-yellow sides, near the Montana border, and the railway route then descends from the higher region to the valley of the Yellowstone.

The Yellowstone River, one of the headwaters of the Missouri, rises in the National Park, and its fertile valley is among the leading pasturages of Montana.

Cattle and sheep abound, and the cowboys are universal, galloping about on energetic little bronchos, with lariats hanging from the saddle. The Big Horn River flows in, and an extensive region to the southward is the Crow Indian reservation, about three thousand living there. It was here, near Fort Custer, at a point forty-five miles south of the railroad, that the terrible massacre took place in June, 1876, by which General Custer and his command of over two hundred and fifty men were annihilated by the Sioux. There is now a national cemetery at the place. We gradually enter the mountain ranges which are the outposts of the Rockies, and passing between the Yellowstone range and the Belt Mountains, reach Livingston, a town of several thousand people, and a great centre for hunting and fishing, at the entrance to the Yellowstone National Park. From here a branch railway turns southward, ascending the valley of the Yellowstone, going through its first canyon, known as the "Gate of the Mountain," an impressive rocky gorge, and ascending a steep grade, so that the floor of the valley rises within the Park to an elevation of over six thousand feet above the sea. A second canyon is passed, and on its western side is a huge peak whose upheaved red rocks have named it the Cinnabar Mountain. These red rocks are in strata streaked down its sides with intervening granite and limestone. One of these, the Devil's Slide, is conspicuous, its quartzite walls rising high above the lower strata and making a veritable slide of great proportions down the mountain. The railroad ends at Cinnabar, and stages cover the remaining distance up the Yellowstone to its confluence with Gardiner River at the Park entrance, and thence to the Mammoth Hot Springs within the Park, the tourist headquarters.

THE AMERICAN WONDERLAND.

The Yellowstone National Park has been set apart by Congress as a public reservation and pleasure-ground, and covers a surface of about fifty-five hundred square miles within the Rocky Mountains. Most of the Park is in the northwestern corner of Wyoming, but there are also small portions in Montana to the north and Idaho to the west. It is a tract more remarkable for natural curiosities than an equal area in any other part of the world, and within it are the sources of some of the greatest rivers of North America. The Yellowstone, Gardiner and Madison Rivers, which are the headwaters of the Missouri, flow out of the northern and western sides, while on the southern side originates the Snake River, one of the sources of the Columbia River of Oregon, and also the Green River, a branch of the Colorado, flowing into the Gulf of California. The

central portion of the Park is a broad volcanic plateau, elevated, on an average, eight thousand feet above the sea, and surrounded by mountain ridges and peaks, rising to nearly twelve thousand feet, and covered with snow. The air is pure and bracing, little rain falls, and the whole district gives evidence of remarkable volcanic activity at a comparatively late geological epoch. It contains the most elevated lake in the world, Yellowstone Lake. The Yellowstone River flows into this lake, and then northward through a magnificent canyon out of the Park. Its most remarkable tributary within the Park is Tower Creek, flowing through a narrow and gloomy pass for two miles, called the Devil's Den, and just before reaching the Yellowstone having a fall of one hundred and fifty-six feet, which is surrounded by columns of breccia resembling towers. There is frost in the Park every month in the year, owing to the peculiar atmospheric conditions. The traces of recent volcanic activity are seen in the geysers, craters and terrace constructions, boiling springs, deep canyons, petrified trees, obsidian cliffs, sulphur deposits and similar formations. These geysers and springs surpass in number and magnitude those of the rest of the world. There are some five thousand hot springs, depositing mainly lime and silica, and over a hundred large geysers, many of them throwing water columns to heights of from fifty to two hundred and fifty feet. The most elaborate colors and ornamentation are formed by the deposits of the springs and geysers, these curiosities being mainly in and near the valleys of the Madison and Gardiner Rivers. An attempt has been made under Government auspices to have in the Park a huge game preserve, and within its recesses large numbers of wild animals are sheltered, including deer, elk, bears, big-horn sheep, and the last herd of buffalo in the country. Troops of cavalry and other Government forces patrol and govern the Park.

THE MAMMOTH HOT SPRINGS.

This extraordinary region was first made known in a way in 1807. A hunter named Coulter visited it, and getting safely back to civilization, he told such wonderful stories of the hot springs and geysers that the unbelieving borderers, in derision, called it "Coulter's Hell." Others visited it subsequently, but their remarkable tales were generally regarded as romances. The first thorough exploration was made by Prof. Hayden's scientific party for the Government in 1871, and his report led Congress to reserve it as a public Park. The visitor generally first enters the Park at the Mammoth Hot Springs, which are near the northern verge of the broad central plateau. Here are the wonderful terraces built up by the earlier calcareous deposits of these Springs, covering an area of several

square miles, and in the present active operations about two hundred acres, with a dozen or more terraces, and some seventy flowing springs, the temperature of the water rising to 165°. The lower terrace extends to the edge of the gorge of Gardiner River, with high mountain peaks beyond. The hotel is built on one of the terraces, with yawning caves and the craters of extinct geysers at several places in front. The higher terraces rise in white, streaked with brown and other tints, as the overflowing, trickling waters may have colored them. The best idea that can be got of this place is by conjuring up the popular impression of the infernal regions with an ample stock of heat and brimstone. For a long distance, rising from the top of the gorge of Gardiner River westward in successive terraces to a height of a thousand feet above the stream, the entire surface is underlaid with sulphur, subterranean fires, boiling water and steam, which make their way out in many places. The earth has been cracked by the heat into fissures, within which the waters can be heard boiling and running down below, and everything on the surface which can be, is burnt up. Almost every crevice exudes steam and hot water; sulphur hangs in stalactites from the caves; and in some places the odors are nearly overpowering. It is no wonder the Indians avoided this forbidding region, and that the tales told by the early explorers were disbelieved. Yet it is as attractive as it is startling. The hot springs form shallow pools, where the waters run daintily over their rim-like edges, trickling down upon terrace after terrace, forming the most beautiful shapes of columns, towers and coral decorations from the lime deposits, and painting them with delicious coloring in red, brown, green, yellow, blue and pink. So long as the waters run, this decoration continues, but when the flow ceases, the atmosphere turns everything white, and the more delicate formations crumble. The whole of this massive structure has been built up by ages of the steady though minute deposits of the waters, the rate being estimated at about one-sixteenth of an inch in four days. The rocks upon which these calcareous deposits are made belong to the middle and lower Cretaceous and Jurassic formations, with probably carboniferous limestones beneath that put the deposits in the waters. A dozen different terraces can be traced successively upward from the river bank to the highest part of the formation. Two cones of extinct geysers rise from the deposits, near the hotel,—the Liberty Cap, forty-five feet high, and the Giant's Thumb, somewhat smaller,—both having been built up by the deposits from orifices still seen in their tops, whence the waters have ceased flowing. All these springs, as deposits are made, shift their locality, so that the scene gradually changes as the ages pass.

In climbing about this remarkable formation, some of the most beautiful bits of

construction and coloring nature has ever produced are disclosed. The Orange Geyser has its sides streaked with orange, yellow and red from the little wavelets slowly trickling out of the steaming spring at the top, which goes off at quick intervals like the exhaust of a steam-engine. At the Stalactite Cave the flowing waters add green to the other colors, and also scale the rocks in places like the back of a fish, while below hang stalactites with water dropping from them. The roof of the cave is full of beautiful formations. The water is very hot when it starts from the top, but becomes quite cold when it has finished its journey down. One of the finest formations is Cleopatra's Bath, with Cupid's Cave beneath, the way to them being through Antony's Gate, all built up of the deposits. Here rich coloring is painted on the rocks, with hot water and steam amply supplied to the bath, which has 154° temperature at the outer verge. All the springs form flat basins with turned-up edges, over which the waters flow, and trickling down the front of the terrace, paint it. When the flow ceases, and the surface has been made snowy white by the atmosphere, it becomes a spongy and beautiful coral, crumbling when touched, and into which the foot sinks when walked upon. The aggregation of the currents run in streams over terrace after terrace, spread out to the width of hundreds of feet, painting them all, and then seeking the Gardiner River, flowing through a deep gorge in front of the formation. Everything subjected to the overflow of these currents gets coated by the deposits, so that visitors have many small articles coated to carry away as curiosities.

Among the many beautiful formations made by these Hot Springs, the most elaborate and ornamental are the Pulpit Terraces. These are a succession of magnificent terraces, fifty feet high, with beautifully colored columnar supports. There is a large pulpit, and in front, on a lower level, the font, with the water running over its edges. The pulpit, having been formed by a spring that has ceased action, is white, while the font is streaked in red and brown. Finely carved vases filled with water stand below, and alongside the pulpit there is an inclined surface, whitened and spread in wrinkles like the drifted snow, which requires very little imagination to picture as a magnificent curtain. Beyond is a blackened border like a second curtain, the coloring being made by a spring impregnated with arsenic. In front of this gorgeous display the surface is hot and cracked into fissures, with bubbling streams of steaming water running through it, and great pools fuming into new basins with turned-up edges, over which the hot water runs. Upon one of these pools seems to be a deposit of transparent gelatine, looking like the albumen of an egg, streaked into fantastic shapes by elongated bubbles. Everywhere are surfaces, over which the water runs, that are

covered with regular formations like fish scales. It is impossible to adequately describe this extraordinary place, combining the supposed peculiarities and terrors of the infernal regions with the most beautiful forms and colors in decoration. The great hill made by these Hot Springs was, from its prevailing color, named the White Mountain by Hayden. The springs extend all the way down to the river bank, and there are some even in the river bed. It is a common experiment of the angler to hook a small fish in the cold water of the river, and then, without changing position, to swing him on the hook over into the basin of one of these hot springs to cook him. The formation of the terraces is wedge-shaped, and runs up into a gulch between the higher mountains, which have pines scattered over them, and also grow some grass in sheltered nooks. It is said that the volume of the springs is gradually diminishing.

THE NORRIS GEYSER BASIN.

The route southward into the Park crosses mountain ridges and over stretches of lava and ashes and other volcanic formations, through woods and past gorges, and reaches the Obsidian Creek, which flows near the Obsidian Cliff. This remarkable structure is a mountain of black glass of volcanic formation, rising six hundred feet, with the road hewn along its edge. It looks as if a series of blasting explosions had blown its face into pieces, smashing the glass into great heaps of *débris* that have fallen down in front. The formation is columnar, rising from a morass adjoining Beaver Lake, which is a mile long. The divide is thus crossed between the Gardiner and Gibbon Rivers, the latter flowing into the Madison, and here, twenty-five miles from the Mammoth Hot Springs, is the Norris Geyser Basin. In approaching, seen over the low trees, the place looks much like the manufacturing quarter of a city, steam jets rising out of many orifices, and a hissing being heard as of sundry engine exhausts. The basin covers about one hundred and fifty acres, and is depressed below the general level. The whole surface is lime, silica, sulphur and sand, fused together and baked hard by the great heat, cracked into fissures, and, as it is walked over, giving out hollow sounds, showing that beneath are subterranean caves and passages in which boil huge cauldrons. There is a background formed by the bleak-looking mountains of the Quadrate range, having snow upon their tops and sides. The steam blows off with the noise of a hundred exhaust pipes, and little geysers boil everywhere, occasionally spurting up like the bursting of a boiler. In one place on the hillside the escaping steam from the "Steamboat" keeps up a loud and steady roar; in another is the deeper tone of the "Black Growler." As a

general thing, the higher vents on the hill give off steam only, while the lower ones are geysers. The trees are coated with the deposits, the surface is hot, and all underneath seems an immense mass of boiling water, impregnated with sulphur, giving off powerful odors, while brimstone and lime-dust encrust everything, and a large amount of valuable steam-power goes to waste.

This is the smallest of the basins, having few large geysers. Most of them are little ones, spurting every few minutes, and with some view to economy, whereby the water, after being blown out of the crater to a brief height, runs back into the orifice again, ready to be ejected by the next explosion. A mud geyser here throws up large quantities of dirty white paint in several spouting jets, the eruption continuing ten minutes, when nearly all the water runs back again, leaving the crater entirely bare, and its rounded, water-worn rocks exposed. The "Emerald Pool" is the wide crater of an old geyser, filled with hot water of a beautiful green color, constantly boiling, but never getting as far as an eruption. Probably the best geyser on exhibition in this basin is the "Minute Man," which, at intervals of about one minute, spouts for ten or twelve seconds, the column rising thirty feet, and the rest of the time it blows off steam. The "Vixen" is a coquette which is delightfully irregular, never going off when watched, but when the back is turned suddenly sending out a column sixty feet high. The great geyser here is the "Monarch," standing in a hill from which it has blown out the entire side, and once a day discharging an enormous amount of water over one hundred feet high, and continuing nearly a half-hour. Its column comes from two huge orifices, the surplus water running down quite a large brook. When quiet, this geyser industriously boils like a big tea-kettle. There are plenty of "paint pots" and sulphur springs, and the visitors coax up lazy geysers by throwing stones into them,—a method usually making the small ones go to work, as if angry at the treatment.

THE LOWER AND MIDDLE BASINS.

Through the long deep canyon of the Gibbon River, and up over the mountain top, giving a distant view of the Gibbon Falls, a cataract of eighty feet far down in the valley, the road crosses another divide to a stream in the worst portion of this Satanic domain, which has not been inappropriately named the Firehole River. This unites with the Gibbon to form the Madison River, one of the sources of the Missouri. Miles ahead, the steam from the Firehole Geyser Basins can be seen rising in clouds among the distant hills. Beyond, the view is closed by the Teton Mountains, far to the southwest, rising fourteen thousand feet, the

Continental divide and backbone of North America, the highest Rocky Mountain range, on the other side of which is the Snake River, whose waters go off to the Pacific. The Firehole River is a stream of ample current, with beautifully transparent blue water bubbling over a bed of discolored stones and lava. Its waters are all the outflow of geysers and hot springs, impregnated with everything this forbidding region produces; pretty to look at, but bitter as the waters of Marah. Along this river, geysers are liberally distributed at intervals for ten miles, being, for convenience of description, divided into the Lower, Middle and Upper Geyser Basins. The Lower Basin, the first reached, has myriads of steam jets rising from a surface of some three square miles of desolate geyserite deposits. There are about seven hundred springs and geysers here, most of them small. The Fountain Geyser throws a broad low stream of many interlacing jets every two to three hours, lasting about fifteen minutes. The "Thud" Geyser has a crater one hundred and fifty feet in diameter, having a smaller rim inside, within which the geyser operates, throwing a column of sixty feet with a heavy and regular "thud" underground, though it has no fixed period, and is irregular in action. This basin has a generous supply of mud geysers, known as the "paint pots," which eject brilliantly colored muds with the consistency and look of paint, the prevailing hues being red, white, yellow and pink.

About three miles to the southwest, farther up the Firehole River, is the Middle Geyser Basin. It is a locality covering some fifty acres, close to the river, and contains the greatest geyser in the world. The name of Hell's Half Acre was given this place in the early explorations, and still sticks. The surface is composed mainly of hot ashes, with streams of boiling water running over it. The whole basin is filled with hot springs, and surrounded by timbered hills, at the foot of which is the Prismatic Lake, its beautiful green and blue waters shading off into a deposit of bright red paint running down to the river. The great Excelsior Geyser is a fountain of enormous power but uncertain periods, which when at work throws out such immense amounts of water as to double the flow of the river. Its crater is a hundred yards wide, with water violently boiling in the centre all the time and a steady outflow. The sides of the crater are beautifully colored by the deposits, which are largely of sulphur. It is a geyser of modern origin, having developed from a hot spring within the memory of Park denizens. It throws a column over two hundred feet high, and while quiet at times for years, occasionally bursts forth, though having no fixed period. In close connection to the westward is the seething cauldron which is the immediate Hell's Half Acre, that being about its area—a beautiful but terrible lake, steam constantly rising from the surface, which boils furiously and sends copious

streams over the edges. This is an uncanny spot, with treacherous footing around, and about the hottest place in the Park.

THE UPPER FIREHOLE BASIN.

For five miles along the desolate shores of Firehole River the course is now taken in a region of mostly extinct geysers, yet with active hot springs and steam jets, and having ashes and cinders covering wide spaces. Ahead is the largest collection of geysers in the world, with clouds of steam overhanging—the Upper Firehole Basin. Hot water runs over the earth, and the "paint pots" color the surface in variegated hues. Here are some forty of the greatest geysers in existence, in a region covering two or three square miles, all of them located near the river, and their outflow making its initial current. The basin is at seventy-three hundred feet elevation above the sea. When the author visited this extraordinary place the guide, halting at the verge, said: "Now I have brought you to the front door of hell." He was asked if there were any Indians about there, and solemnly replied: "No Indian ever comes into this country unless he is blind; only the white man is fool enough to come;" then after a moment's pause he continued, "And I get paid for it, I do." The great stand-by of this Upper Basin, and the geyser that is first visited, is "Old Faithful," near its southern or upper end. This most reliable geyser, which always goes off at the time appointed, is a flat-topped and gently rising cone about two hundred feet in diameter, and elevated towards the centre about twenty feet. The tube is an orifice of eight feet by two feet wide in the centre of this cone, with water-worn and rounded rocks enclosing it. Steam escapes all the time, and the hard, scaly and laminated surface around it seems hollow as you walk across, while beneath there are grumblings and dull explosions, giving warning of the approaching outburst. Several mounds of extinct geysers are near, with steam issuing from one of them, but all have long since gone out of active business. Soon "Old Faithful" gives the premonitory symptoms of an eruption. The steam jet increases, and also the internal rumblings. Then a little spurt of hot water comes, hastily receding with a growl, followed by more steam, and after an interval more growling, finally developing into repeated little spurts of hot water, occupying several minutes. Then the geyser suddenly explodes, throwing quick jets higher and higher into the air, until the column rises in a grand fountain to the height of about one hundred and fifty feet, the stream inclined to the northward, and falling over in great splashes upon that side of the cone, dense clouds of steam and spray being carried by the wind, upon which the sun paints a

rainbow. After some four minutes the grand jet dies gradually down to a height of about thirty feet, continuing at that elevation for a brief time, with quickly repeated impulses. When six minutes have elapsed, with an expiring leap the water mounts to a height of fifty feet, there is a final outburst of steam, and all is over. A deluge of hot water rushes down to the Firehole River; and thus "Old Faithful" keeps it up regularly every hour. The eruption being ended, you can look down into the abyss whence it came. Through the hot steam, rushing out with a strong draught, there is a view far down into the rocky recesses of the geyser. The water left by the eruption stands about in transparent shallow pools, and is tinted a pale blue. "Old Faithful's" mound is built up of layers of geyserite—hard, brittle, porous, full of crevices, and having all about little basins with turned-up rims that retain the water. This geyser is the favorite in the region, not only because of its regular performance, but possibly because its odors are somewhat less sulphurous than those emanating elsewhere.

The geysers of the Upper Basin contribute practically the whole current of the Firehole River, their outflow sending into the stream ten million gallons daily. Across the river to the northward, close to the bank, is the Beehive, its tube looking like a huge bird's nest, enclosed by a pile of geyserite resembling a beehive, three feet high and about four feet in diameter. Nearby is a vent from which steam, escaping a few minutes before the eruption, gives notice of its coming. The water column shoots up two hundred feet, with clouds of steam, but it is quite uncertain, spouting once or twice in twenty-four hours, and usually at night. Behind the Beehive are the Lion, the Lioness, and their two Cubs, and to the eastward of the latter the Giantess. The Lion group has only uncertain and small action, while the Giantess is on the summit of a mound fifty feet high, with a depressed crater, measuring eighteen by twenty-four feet, and usually filled with dark-blue water. This is the slowest of all the geysers in getting to work, acting only at fortnightly intervals, but each eruption continues the greater part of the day, with usually long-previous notice by violent boiling and internal rumblings. When it comes, the explosion is terrific, the column mounting two hundred and fifty feet, a perfect water-spout the full size of the crater, with a half-dozen distinct jets forced through it. To the northwest of the Lion and across the river is the Castle, so named from the castellated construction of its crater. It stands upon an elevation, the side towards the Firehole falling off in a series of rude steps. The tube is elevated about ten feet within the castle and is four feet in diameter. It is of uncertain eruption, sometimes playing daily and sometimes every other day, throwing a column of one hundred and fifty feet, falling in a sparkling shower, continuing about forty minutes, and then tapering off in a

series of insignificant spurts. The Saw-Mill is not far away, rather insignificant, its tube being only six inches in diameter, set in a saucer-like crater about twenty feet across; but its water column, thrown forty feet high, gives the peculiar sounds of a saw, caused by the action of puffs of steam coming out alternately with the water jets. It generally acts in unison with the Grand Geyser, a quarter of a mile northward, which goes off about once a day. The Grand Geyser in action is most powerful, causing the earth to tremble, while there are fearful thumping noises beneath. The water in the crater suddenly recedes, and then quickly spurts upward in a solid column for two hundred feet, with steam rising in puffs above. The column seems to be composed of numerous separate jets, falling back with a thundering sound into the funnel. The outburst continues a few minutes, stops as suddenly as it starts, and is repeated six or eight times, each growing less powerful. Along the river bank nearby are the Wash Tubs, small basins ten feet in diameter, each with an orifice in the bottom. If the clothes are put in, the washing progresses finely until suddenly out goes the water, and with it all the garments, sucked down the hole. After awhile the basin fills again, and back come the clothes, though sometimes they are very dilatory in returning. The Devil's Well, about fifty feet away, is usually accused of complicity in this movement. It is a broad and placid basin of hot water, with a beautiful blue tinge, in which tourists sometimes boil their eggs and potatoes. It is sentinelled by the Comet Geyser, exploding several times daily, but through an orifice so large that it does not throw a very high column.

The great geyser of this Upper Basin is the Giant. It has a broken cone set upon an almost level surface, with the enclosing formation fallen away on one side, the interior being lined with brilliant colors like a tessellated pavement. It is somewhat uncertain in movement, but usually goes off every fourth day. It gives ample notice, certain "Little Devils" adjoining, and a vent in the side of the crater, boiling some time before it sends up the enormous column which plays ninety minutes. The outburst, when it starts, comes like a tornado, and the stream from it runs into and more than doubles the current of the river. The column is eight feet in diameter, rises two hundred and fifty feet at first, and is afterwards maintained at two hundred feet. There is a deafening noise, and the steam clouds seem to cover half the valley. The column goes up perfectly straight, and falls back around the cone with a deluge of hot water. The Catfish, a small geyser, is nearby, and to the northward a short distance is the Grotto. This is an odd formation, its crater perforated with orifices around a low, elongated mound, which point in different directions; and when it goes off at six-hour intervals, the eruption is by streams at an angle, giving a curious sort of churning motion to

the water column, which rises forty feet, continuing twenty minutes. The Riverside has a little crater on a terraced mound just at the river's edge, and is a small, irregular but vigorous spouter, throwing a stream sixty feet. The Fan has five spreading tubes, arranged so that they make a huge fan-like eruption, one hundred feet high in the centre, this display, given three or four times a day, continuing about fifteen minutes. The Splendid plays a jet two hundred feet high every three hours, continuing ten minutes, and may be spurred to quicker action. The Pyramid and the Punch Bowl are geysers that have ceased operations. The former is now only a steam-jet, and the latter, on a flat mound, is an elegant blue pool, elevated several feet, and having a serrated edge. The Morning Glory Spring, named from its resemblance to the convolvulus, is a beautiful and most delicately tinted pool. The investigators of these geysers have been able to get the temperature at a depth of seventy feet within the tubes, and find that under the pressure there exerted the boiling-point is 250°. Upon this fact is based the theory of the operation of the geyser. The boiling-point under pressure at the bottom of a long tube being much higher than at the top, the expansive force of the steam there suddenly generated drives out violently the water above it in the tube, and hence the explosive spouting.

YELLOWSTONE FALLS AND CANYON.

The National Park, besides the extraordinary geyser and hot-spring formations exhibits the grand scenery of the Yellowstone Falls and Canyon. The Yellowstone River has its source in Bridger Lake, to the southeast of the Park, and flows northward in a broad valley between generally snow-capped mountain ridges of volcanic origin, with some of the peaks rising over eleven thousand feet. It is a sluggish stream, with heavily timbered banks, much of the initial valley being marshy, and it flows into the Yellowstone Lake, the largest sheet of water at a high elevation in North America. This lake has bays indented in its western and southern shores, giving the irregular outline somewhat the appearance of a human hand, and there are five of them, called the "Thumb" and the "Fingers." The thumb of this distorted hand is thicker than its length, the forefinger is detached and shrivelled, the middle finger has also been badly treated, and the much swollen little finger is the biggest of all, thus making a very demoralized hand. The trail eastward over from the Upper Firehole Geyser Basin comes out on the West Thumb of the lake, mounting the Continental Divide on the way, and crossing it twice as it makes a curious loop to the northward, the second crossing being at eighty-five hundred feet elevation,

whence the trail descends to the West Thumb. Yellowstone Lake is at seventy-seven hundred and forty feet elevation, and covers about one hundred and fifty square miles, having a hundred miles of coast-line. The scenery is tame, the shores being usually gentle slopes, with much marsh and pine woods. Islands dot the blue waters, and waterfowl frequent the marshes. The most elevated portion of the immediate environment is Flat Mountain, on the southwestern side, rising five hundred feet, but beyond the eastern shore are some of the highest peaks of the Park, exceeding eleven thousand feet. Hot springs adjoin the West Thumb, and there is an actual geyser crater in the lake itself. Towards the northern end the shores gradually contract into the narrow and shallow Yellowstone River, which flows towards the northwest after first leaving the lake, having occasional hot springs, geysers, paint pots and steam jets at work, with large adjacent surfaces of geyserite and sulphur. The chief curiosity in operation is the Giant's Cauldron, boiling furiously, and with a roar that can be heard far away. The pretty Alum Creek is crossed, its waters, thus tainted, giving the name. South of this the Yellowstone is generally placid, winding for a dozen miles sluggishly through prairie and timbered hills, but now it contracts and rushes for a mile down rapids and over pretty cascades to the Upper Fall.

Restricted to a width of but eighty feet, the river shoots far over this fall, the current being thrown outward, indicating there must be room to pass behind it. The fall is one hundred and twenty feet, and suddenly turning a right angle at its foot, the stream of beautiful green passes through a not very deep canyon. The appearance of the surrounding cliffs is quite Alpine, though the rocks forming the cascade constantly suffer from erosion. About a half-mile below is the great Lower Falls of the Yellowstone. Before reaching it, a little stream comes into the river over the Crystal Fall, about eighty feet high, rushing down a gorge forming a perfect grotto in the side of the canyon, extending some distance under the overhanging rocks. The surface of the plateau gradually ascends as the Lower Falls are approached, while the river bed descends, and this makes a deep canyon, brilliantly colored, generally a light yellow (thus naming the river), but in many portions white, like marble, with patches of orange, the whole being streaked and spotted with the dark-gray rocks, whose sombre color in this region is produced by atmospheric action. The river rushes to the brink of the Lower Fall, and where it goes over, the current is not over a hundred feet wide, the descent of the cataract being about three hundred feet, and the column of falling waters dividing into separate white streaks, which are lost in clouds of spray before reaching the bottom. Only a small amount of water usually goes over, about twelve hundred cubic feet in a second. Before the plunge the water forms a

basin of dark-green color, and both blue and green tints mingle with the prevailing white of the cascade. Towards sunset, when viewed from below, there are admirable rainbow effects. The river is quite narrow as it flows away along the bottom of the canyon, which now becomes deep and large. The grand view of this beautiful picture is from Point Lookout, a half-mile below the falls. Unlike any other of the world's great waterfalls, this cascade, while a part, ceases to be the chief feature of the scene. It is the vivid coloring and remarkable formation of the sides of the canyon that make the chief impression. These change as the sun gives light and shadow, the morning differing from noon and noon from night. It is impossible to reproduce or properly describe the beautiful hues in this wonderful picture. The prevailing tint is a light yellow, almost sulphur color, with veins of white marble and bright red streaked through it. The colors blend admirably, while the cascade in the background seems enclosed in a setting of chocolate-brown rocks, contrasting picturesquely with the brighter foreground. Throughout the grand scene, great rocky columns and pinnacles arise, their brilliant hues maintained to the tops, and the scattered pines clinging to these huge columnar formations give a green tinge to parts of the picture. The *débris*, forming an inclined base about half-way down, is colored as brilliantly as the rocks above, from which it has fallen. In the view over the canyon from Point Lookout, the contracted white streak of the cascade above the spray cloud is but a small part of the background, while the river below is only a narrow green ribbon, edged by these brilliant hues. Some distance farther down the canyon, another outlook at Inspiration Point gives a striking view from an elevation fifteen hundred feet above the river of the gorgeous coloring of the upper canyon.

This grand Canyon of the Yellowstone extends, as the river flows, a distance of about twenty-four miles. It is a depression in a volcanic plateau elevated about eight thousand feet above the sea, and gradually declining towards the northern end of the canyon. Above the Upper Fall the river level is almost at the top of the plateau, and the falls and rapids depress the stream bed about thirteen hundred feet. About midway along the canyon, on the western side, is Washburne Mountain, the surface from it declining in both directions, so that there the canyon is deepest, measuring twelve hundred feet. Across the top, the width varies from four hundred to sixteen hundred yards, the angle of slope down to the bottom being fully 45°, and often much steeper, in some cases almost perpendicular where the top width is narrowest. This Grand Canyon is the beautiful beginning, as it were, of the largest river in the world,—the Missouri and the Mississippi. Upon the trail in the southern part of the National Park

which goes over from the Firehole River to the West Thumb, and at quite an elevation upon the Continental Divide, there is a quiet little sheet of water, having two small streams flowing from its opposite sides. To the eastward a babbling brook goes down into the West Thumb of the Yellowstone Lake, while to the southwest another small creek flows over the boulders towards Shoshone Lake. This scanty sheet of water, properly named the Two-Ocean Pond, actually feeds both the Atlantic and Pacific Oceans. The one stream gets its outlet through the Mississippi and the other through the Columbia River of Oregon.

WESTWARD THE COURSE OF EMPIRE.

Here, in the Yellowstone National Park, with the waters flowing towards both the rising and the setting sun, is the backbone of the American Continent. Beyond it the country stretches through the spacious Rocky Mountain ranges to the Pacific. What is herein described gives an idea of the vast empire ceded to the United States by France in the early nineteenth century, and this Great Northwest is gradually becoming the masterful ruling section of the country. When Bishop Berkeley, in the early eighteenth century, sitting by the Atlantic Ocean waves at Newport, composed his famous lyric on the "course of empire," he little thought how typical it was to become more than a century after his death. He was musing then "On the Prospect of Planting Arts and Learning in America." The Arts and the Learning have had vigorous American growth, but his Muse predicted a greater empire than any one could have then imagined.

The Muse, disgusted at an age and clime
Barren of every glorious theme,
In distant lands now waits a better time,
Producing subjects worthy fame.

"In happy climes, where from the genial sun
And virgin earth such scenes ensue,
The force of Art by Nature seems outdone,
And fancied beauties by the true;

"In happy climes, the seat of innocence,
Where Nature guides and Virtue rules,
Where men shall not impose for truth and sense
The pedantry of courts and schools;

"There shall be sung another golden age,
The rise of empire and of arts,
The good and great inspiring epic rage,
The wisest heads and noblest hearts.

"Not such as Europe breeds in her decay;
Such as she bred when fresh and young,
When heavenly flame did animate her clay,
By future poets shall be sung.

"Westward the course of empire takes its way;
The four first acts already past,
A fifth shall close the drama with the day;
Time's noblest offspring is the last."

END OF VOLUME I

*** END OF THIS PROJECT GUTENBERG EBOOK AMERICA, VOLUME II (OF 6) ***

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